Textile World

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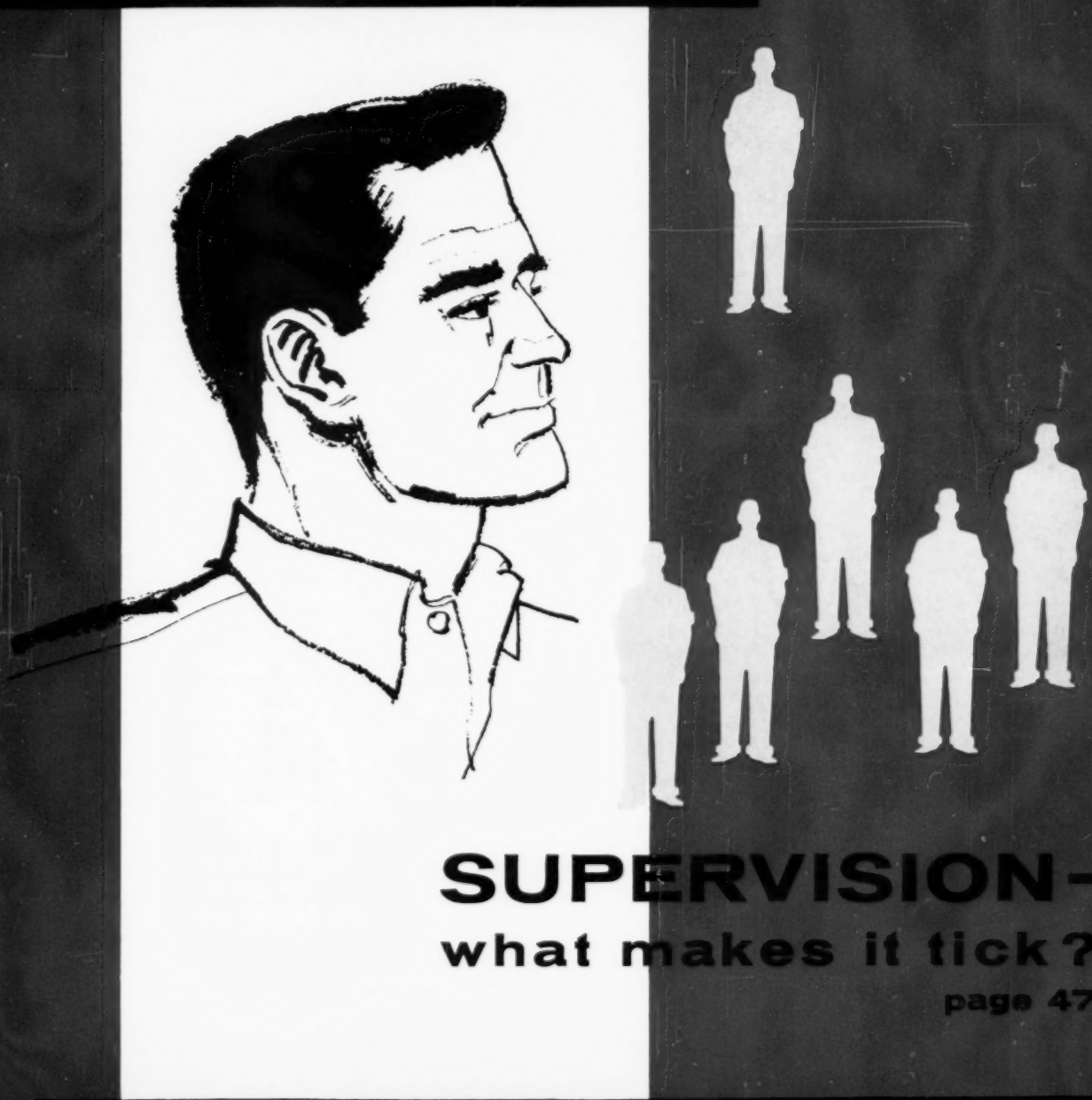
The KNOW-HOW . . . KNOW-WHY Publication in Textiles



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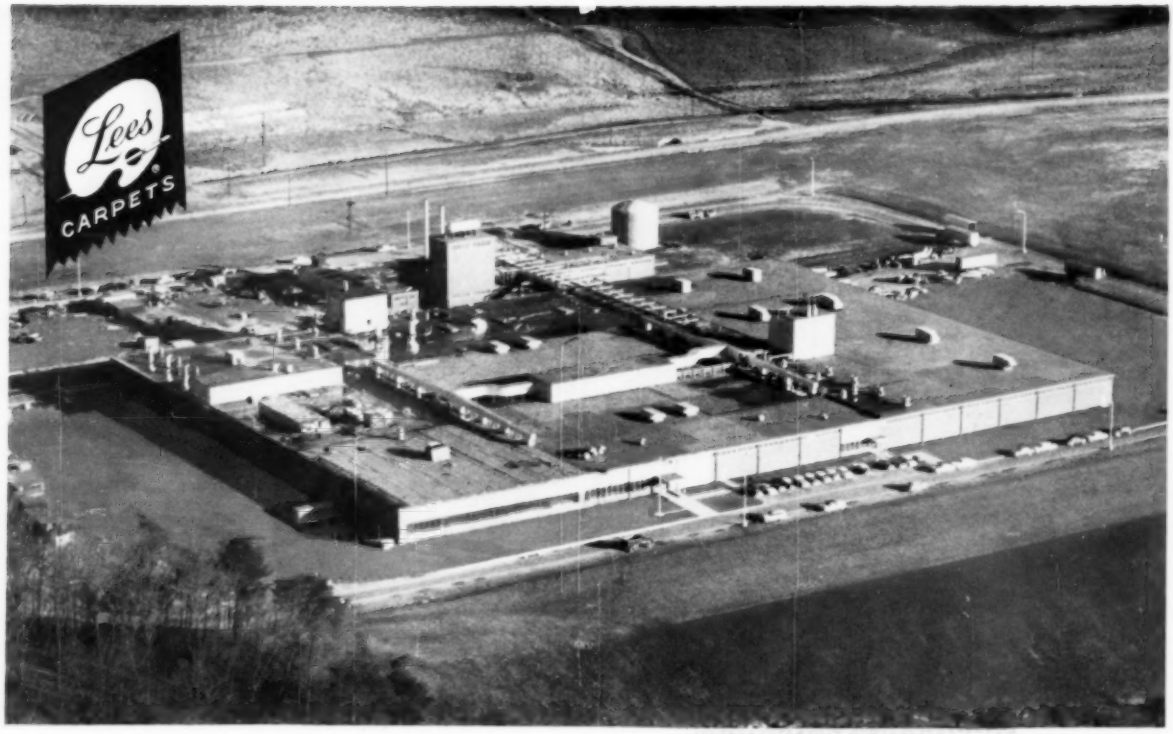

Aerial view of RABUN MILLS, Rabun Gap, Ga.

LEES NEW TUFTED CARPET MILL

Rabun Mills, Inc., was constructed to complete the manufacturing processes for "those heavenly carpets by Lees." This modern plant compliments The Pinetree Company, Dahlonega, Georgia and Fontana Mills, Inc., Robbinsville, North Carolina.

Again Robert and Company Associates were called on to design and supervise construction of this efficient new tufting, dyeing and finishing plant.

Lees is only one of the many leaders in the textile industry which call on Robert and Company Associates to design plants and plant additions. We have been serving the great names in textiles for over 40 years.

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Volume 108, No. 12

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TEXTILE BUSINESS

Textile World

DECEMBER • 1958

Press Time . . .
Stock Market
Takes 3-Year Dip

The stock market took a violent dip on Nov. 24, running up a loss not equaled in three years. This break bore out the warning (written a few days before) published on p. 7 of Textile Business in this issue.

On Nov. 25, losses continued but were of a smaller order.

The lesson is: Any time the market is at a level that confidence flounders, more serious floundering is ahead—in days, weeks, or months.

Mill Prices Jump Under Heavy Buying Pressure

Cotton-gray-goods prices raced upward the middle of last month in the heaviest and broadest surge of buying mills have seen since the scare buying spree triggered by the Korean war.

After weeks of slowly vanishing mill backlogs and spot tightening of supplies in some constructions, buyers suddenly found goods hard to find in nearly all constructions of the vast cotton-gray-goods market.

Like the stock-market ticker running behind under a surge of buying, the price structure of textile goods reached such a state of confusion that few mills knew what prices other mills were quoting.

Prices advanced on nearly all constructions, with some under heaviest pressure moving up as much as a full 1¢. In some cases, that represented a rise of 5% or more. In nearly all constructions, the rise was the largest and firmest the market has seen in years.

•

Print cloth led the way.

The new 41-in. 78x78 4.05-yd. prints, called by many the hottest print cloth on the market, was in such demand that prices were jumping from 17¾¢ for first-quarter delivery to every ⅛¢ fraction between 17¾¢ and 18½¢.

Millions of yards were sold. Many mills booked solid for the first quarter, and many committed looms well into the second quarter.

Premium-quality 80-square print cloths were under almost as much pressure. Prices and sales of this construction have lagged behind the new 41-in. prints nearly the whole year. But the buying pressure spread to the 80-square cloth.

Sales ran well into the second quarter, and prices jumped from 17⅝¢ to 17¾¢, with some mills pushing it up to 18¢ and even to 18½¢, for first-quarter delivery.

Combed-yarn goods shared the favorable market.

Broadcloths moved up ⅛¢ to ½¢, sateens advanced as much as 1½¢, and lawns moved ahead ½¢.

Mill Production Still Going Up

Textile-mill production scored another gain last month.

The TEXTILE WORLD Index (p. 10) rose to 112 for November, two points above the 110 estimated last month for October and one point above this month's revised October estimate of 111. That represents a rise of 16.6% from the April low and is 5.6% above the 106 index last November.

Production has risen in six of the seven months since April.

It dipped only in July, when mills shut down for the Fourth of July holidays.

If the November estimate is revised upward one or two points next month, as has been happening all during the present climb, November will register a 33-months high, putting production at the highest point since February, 1956.

●

The healthiest sign in the present surge of mill production is the inventories-to-sales ratio.

A year ago, inventories were 2.53 times sales. Last month, they were only 2.36 times sales.

Actual inventories stood at $2,489-million last month, against $2,631-million the same month a year ago.

Actual mill sales were running $1,053-million last month, against $1,040-million in the same month a year ago.

These figures indicate that mills not only are running against orders but are also reducing inventories. The signal of danger ahead will come when the ratios reverse; that is, when production and inventories begin to run ahead of sales.

As pointed out on this page last month, the critical period to watch is spring and early summer. It is almost certain that mill production will dip after the pre-Christmas demand for goods tapers off.

But the important factors will be how far the dip goes, how many months a sharp decline continues, and whether or not inventories begin to accumulate.

Cotton Policy To Change Again

WASHINGTON—Cotton is headed for a turn-around of the favorable (for mills) basic policy change gained earlier this year (TEXTILE WORLD, Sept., p. 7).

After 25 years of farm policies based on small acreage and high support prices, Agriculture Secretary Benson headed policy in the opposite direction, permitting extra acreage planting, which should lower prices.

But the election last month put the farmer back in the driver's seat. The Democratic landslide, particularly in farm areas, was a strong protest against Secy. Benson's policies.

Most political analysts believe that farmers, who had been getting a somewhat better shake from the economy in recent months, were frightened that a turn down is in store.

Forecasts for 1959 tend to bear out those fears, unless policies are modified. At the Agriculture Dept.'s annual economic outlook conference in mid-November, economists predicted that huge crops will result in slightly lower prices in 1959, with the farmer losing 5% to 10% in net farm income.

Congressmen will be seeking to win higher support prices for the farmer in the next session, the big problem being how much acreage and production control the farmer will have to take in order to get the support levels raised.

There will be no serious drive to get supports back to the rigid 90% of parity that prevailed before the Benson program, but look for a support level somewhere between 75% and 90% of parity.

Cotton Loses and Gains In Industrial Uses

The use of cotton in industrial yarns and fabrics has been in a state of flux for the last 10 years, a report by the National Cotton Council shows.

From 1947 through 1952, cotton consumption in industrial uses dropped from 2.7-million bales to about 1.8-million. That's a loss of 0.9-million bales, or one-third of cotton's 1947-industrial-uses market.

The greatest loss came in tire cord, where the market shifted to rayon.

From 1952 through 1956, the latest year covered by the report, the use of cotton for industrial yarns and fabrics has remained relatively stable.

In auto uses except tire cord, cotton gained from 91,000 bales in 1947 to 144,000 bales in 1956.

Two other uses where cotton slipped were bags and laundry and dry-cleaning equipment and supplies. Use in bags dropped from almost 440,000 bales in 1947 to 169,000 bales in 1956. Use in laundries slipped from almost 137,000 bales in 1947 to about 73,000 bales in 1956.

Gains were made in awnings (37,000 bales in 1947 to more than 59,000 bales in 1956), abrasives, wiping cloths, industrial thread, luggage, shoes, tents, and zipper tapes.

Tufted Textiles Gain

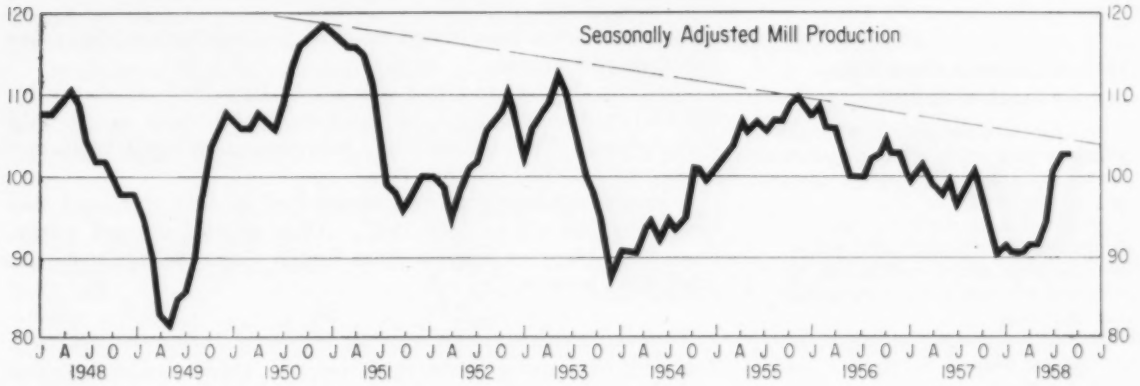
Total shipments of tufted textile products amounted to $171.1-million in the first six months of 1958, compared with $168.8-million in the first half of 1957, the Dept. of Commerce reports.

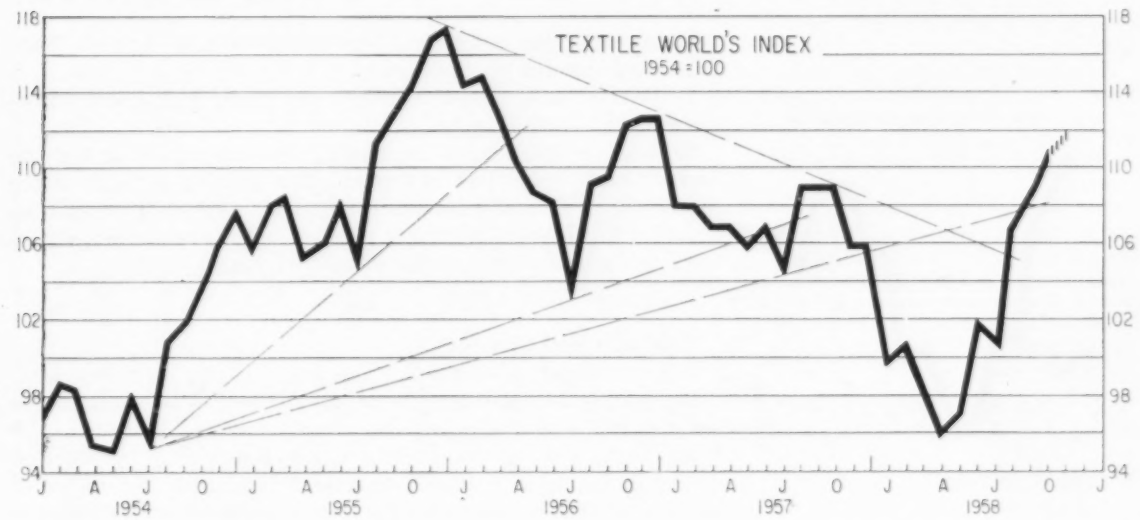
Tufted rugs and carpeting accounted for $148.2-million of the $171.1-million shipped this year. That is a 3% increase in rug and carpeting shipments over the first half of 1957.

Tufted bedspreads were 4% lower in the first half of 1958 than in the same 1957 period.

Yarns used for tufted products amounted to 137-million lbs., of which cotton accounted for 29-million lbs., rayon and acetate 43.9-million lbs., and wool 8.5-million lbs.

Textiles' Major Trend Now Poised for Reversal





Textile-industry production is now at a point that would be labeled "critical" by chart analysts. Production is at a peak at which the medium-term downward trend that has held since December 1950 could be reversed.

The two accompanying charts of mill production show the raw (unadjusted) short-term trend (1954-58) in the chart labeled "Textile World's Index" and the seasonally adjusted medium-term trend (1948-58).

•

Here's how chart technicians would analyze the present situation by these charts:

On the 10-year seasonally adjusted chart, a medium-term peak was made in December 1950 under the impetus of Korean-war buying. A downward short-term trend was set in May 1953 when production topped out without retracing the loss from the previous (1950) high.

A medium-term trend was set in November 1955 when production retraced its loss roughly to the short-term downtrend line represented on the chart by the broken line slanting downward to the right from the 1950 and 1953 peaks.

In the present up cycle of the chart, seasonally adjusted government figures are available now only through September. At that time, production hovered just under the downtrend line.

The significance of such chart analysis is this: In a highly cyclical market, where mass psychology is an important factor in the ups and downs, as is in textiles, sales (and production) are apt to move downward in descending peaks or upward in ascending bottoms.

Chartists say that once a trend line is broken,

1958 Department-Store Sales Remain Level With 1957

Department-store sales held level with last year in the Jan. 1-Nov. 8 period, after first reaching an even keel in mid-October.

Brisk fall sales wiped out the 2% to 3% deficit from last year; and in the four-week period ending Nov. 8, sales ran 4% ahead of the same period last year.

Of the 12 districts reported on by the Federal Reserve Board, only one district, Chicago, failed to gain over last year in the four-week period. In the Chicago district, sales were even with last year.

Four-week gains over last year ranged from 8% in the Boston, Philadelphia, and Richmond districts to 1% in the Dallas district and 2% in the Cleveland and Minneapolis districts.

For the year, the Richmond, Atlanta, and San Francisco districts were level with last year; the Cleveland, Chicago, St. Louis, Minneapolis, and Dallas districts were slightly below; and the Boston, New York, Philadelphia, and Kansas City districts were above last year.

WORLD BRIEFS . . .

British Knit Exports Drop

LONDON — Hosiery and knitwear exports for the nine months January-September ran at an annual rate of $54.4-million, about $11-million below the 1957 rate.

Falling U. S. sales, particularly wool knits, were chiefly responsible. Exports to the U. S. fell 39% and to Canada 10%.

•

Russia Develops New Fibers

MOSCOW—The Soviet chemical industry has recently announced three new man-made fibers.

Super — a high-tenacity viscose said to be three times stronger than regular viscose.

Enant—a nylon filament fiber similar to Kapron but said to "surpass Kapron in quality." It is more heat resistant and is very elastic.

CONTINUED ON PAGE 8

the movement will be stronger in that direction before there is much worth-while movement in the opposite direction.

•

The short-term unadjusted chart of mill production illustrates this type of analysis.

The first short-term trend was set in July 1955, as shown by the broken line running from the July 1954 bottom to the July 1955 bottom. This uptrend line was broken in April 1956, and production skidded another 8%.

A second uptrend line was established in July 1956 and was broken by the dip in July 1957. After a brief upward flurry, production plunged down a little better than 8% again to the April 1958 bottom.

However, a downtrend was being developed during this activity. A strong three-point downtrend line was set by the descending peaks reached in December 1955, December 1956, and October 1957.

This short-term downtrend line was broken in August 1958. This breakthrough should signal:

1. Still higher production before any really significant downward move.

2. With production in September hovering just under the medium-term trend line and production gaining strongly since September, the medium-term downtrend (1950-58) should be broken. That would signify a change in the trend from downward to upward over a period of several years.

•

Will the trend change?

It is too early yet to say.

One widely accepted way to adjust for season is to divide the same month a year ago into the present month.

As can be seen on the TEXTILE WORLD Index chart, production in September of this year was exactly equal to September of last year. That accounts for the level movement on the adjusted chart from August to September.

Again as can be seen on the raw Index chart, production went higher in October and November of this year than in the same months last year. So the adjusted line should turn up when October and November government figures are available. It is likely that the downtrend line will be touched or lightly broken.

•

December and January production will almost certainly carry the production line strongly above the downtrend line.

After last year's October peak, production fell sharply toward the April bottom. As the "Mill Prices" article in this section indicates, production is not likely to drop significantly in the first quarter of next year.

If it doesn't, the seasonally adjusted figures will move sharply upward. That will constitute a strong breakthrough of the downtrend line, signifying still stronger upward movement before much real downward movement.

At the moment, it looks as though spring and summer production will move somewhat as it did in 1955 and 1957—more or less sideways for the first half of the year, with later improvement.

Mill Profits: Fair and Improving

Profit-and-loss statements that came in last month indicate that mills will be glad when their present fiscal years are over.

Of the 10 mills listed in the accompanying table, three ended their fiscal years with current operating statements. All three showed a profit, but earnings for all three were below their 1957 fiscal year.

Avondale's net earnings dropped from $1,407,361 to $1,003,066, Riegel's from $2,538,366 to $703,000, and Textiles, Inc.'s from $1,051,962 to $649,377.

The mills not ending their fiscal years but reporting on nine months' and three months' operations fared a little better. In each period, half the mills reporting had profits above the similar 1957 period and half had profits below the 1957 period.

Of the six mills reporting on nine months, three were up and three were down. Of the two mills reporting on three months, one was up and one down. The only mill, Collins & Aikman, reporting on six months was up—$294,000 this year, against $274,000 in the same six months last year.

Total earnings by the 10 mills for similar 1957 and 1958 operating periods were down this year—$15,376,675 against $16,349,713 in 1957, a drop just short of $1-million, or about 6%.

•

Here's how operations fared:

Company	Period	Sales		Net Earnings		Change
		1957	1958	1957	1958	
Amerace	9 mos.	$39,216,592	$33,223,240	$1,140,259	$1,823,545	Up
Avondale	year	59,131,209	55,417,639	1,407,361	1,003,066	Down
Collins & Aikman	6 mos.	18,500,000	19,700,000	274,000	294,000	Up
Dan River	9 mos.	119,083,740	115,896,802	3,763,747	3,135,742	Down
Jas. Lees	9 mos.	55,457,111	47,102,627	2,533,622	1,934,415	Down
Mohasco	3 mos.	23,056,475	19,885,879	649,050	1,350,094	Up
	9 mos.	74,699,353	64,014,576	1,970,759	3,365,934	Up
Riegel	year	89,485,916	80,969,000	2,538,366	703,000	Down
Roxbury	9 mos.	12,575,800	13,957,564	694,154	885,507	Up
S. Blumenthal	3 mos.	6,268,808	6,406,297	265,180	219,834	Down
	9 mos.	14,389,371	15,790,475	61,213	12,161	Down
Textiles, Inc.	year	28,221,528	24,153,670	1,051,962	649,377	Down
TOTAL				$16,349,713	$15,376,675	Down

Stock Market Warnings Are Up

The boisterous fall stock-market action is sending red warning flags waving. Experts are beginning to read signs of unsophisticated speculation by too many amateurs.

They point to two danger signs:

• **Low-price shares** (which include most textile issues) are riding high, racing unreasonably ahead of both blue-chip issues and market averages.

• **Short-term trading** (speculation for turnover in less than six months) is hitting the percentages of total trading that often precedes a major bear market.

Standard & Poor's index of low-price shares has

TEXTILE BUSINESS

Phtorlan—reported to be more resistant to chemicals than any other fiber except glass.

•

New Czech Fiber Plant

VIENNA, AUSTRIA—A new plant to produce Kapron fiber will go into production at Humenna, Slovakia province, Czechoslovakia, about July 1, 1959.

The plant will employ about 500 people and will double Czechoslovakia's present fiber production.

•

Russian Machines for Czechs

MOSCOW — Leningrad machine builders shipped 377 textile machines to Czechoslovakia in 1958, 180 of which were cotton combers for the Buchlovan mill.

This comber was awarded a Grand Prix at the 1958 Brussels world fair.

•

Australian Wool to China

MELBOURNE — Australian wool dealers are hopefully eyeing the growing need for wool by Red China.

For the last few years, the Chinese have been Australia's best wool-top customers, with sales in the 1957-58 wool year running better than 9-million lbs. of top. China took another 6-million lbs. of scoured and grease wool.

With new mills building and old mills modernizing, China's wool demand is expected to increase.

But the Chinese want Australia to buy large quantities of other goods, most of which conflict with other Australian industries. So wool dealers may have trouble realizing their brightest hopes for wool exports to China.

•

Scots-Russians in Barter Deal

LONDON — Scotland will export wool goods, hosiery, and footwear in "substantial quantities" to Russia in a new barter agreement for Russian wheat.

•

West German Sales Down

BONN, GERMANY—Sales of textile-mill products dropped 7% in the first eight months of 1958, compared

risen 80% this year, against a 31% rise in S&P's 425-industrial-stock average.

Barron's textile-group average, made up mostly of low-price shares, has risen 77% above the 1958 low, against a rise of only 28% by the Dow-Jones Industrials average.

•

In past similar periods, low-price issues soared by these percentages:

1928—low-price issues up 86%, industrials up 36%
1937—low-price issues up 52%, industrials up 23%
1946—low-price issues up 109%, industrials up 28%

Short-term buying, basically speculative, rose to about 16% of total market volume at the end of September, compared to less than 11% in October 1957. This was the first time short-term volume ran that high since 1955.

These factors are leading many market experts to think the present rise is not the beginning of a new bull market but the third head of the old bull-market peak. If they are right, the market is due for a shakeout of more serious proportions than the 1957 shakeout.

A third factor that lends credence to this opinion is the fact that market analysts can see no reason for the surging rise of this fall.

Issues are by and large selling at an unsound earnings-price ratio; and company profits and possible dividends and increase in worth have not improved enough to support the present market move. That labels the move strongly speculative.

All told, more and more insiders are inclined to batten down the hatches and not be caught in an about-turn. The late November softening bore out this caution.

Soaring Sales Optimism Hits Detroit Auto Makers

DETROIT—The automobile industry has come full cycle from the depression of "black 1958." The tenor now is exhuberant optimism for 1959-model prospects. The bright new cloak of optimism is perhaps best reflected by University of Illinois economist Hans Brems, who recently predicted that new-car sales in 1959 may top 6- or 7-million units.

His estimate couldn't be an idle one; it was made before the cream of his fellow crystal-ballists gathered at the University of Michigan's sixth annual conference on the economic outlook. Brems, incidentally, is the only economist as far as is known who correctly predicted record high auto sales in 1955. His predictions are given added weight by the fact that he, alone, correctly called the turn.

Many auto heads are beginning to acknowledge that experts like Dr. Brems may be right again. GM chairman Frederic G. Donner, at the opening of the Boston Motorama, revised his

estimate of U. S. production upwards to 5.5-million units. Only a month before, at the New York Motorama, he said that this figure included imports, which he estimated at 400,000 cars.

•

GM was just swinging into full production, as of November.

Most divisions were working 9-hr. days, including Saturdays, to fill strike-starved dealer pipelines. None of the five divisional sales managers will commit himself on prospects for the year until his dealers have had a chance to sell from a fully stocked position.

Typical of renewed GM activity, though, is Pontiac Div., which on Nov. 10 announced two-shift operation in all basic manufacturing. A second assembly shift should have been put into operation by now, as it has at Buick. Buick's general manager, E. T. Ragsdale, calls reception of 1959 models "the best in the division's history."

Due mostly to the fact that labor problems coincided with model change-over, Ford Div. is currently setting the industry pace. Sales of 1959 models are up 43% over the average daily rate for the first three quarters of this year, boosting Ford Motor Co. itself to a 33% share of the market. Edsel, Mercury, and Thunderbird assembly plants are also on an overtime six-day-week schedule.

•

Chrysler has suffered most from drawn-out labor problems.

It was not until Nov. 18 that anything akin to full-scale production commenced, the last delay being due to a short-lived strike of 8,000 union-represented salary workers.

However, labor troubles for Chrysler and others are by no means over. A majority of parts suppliers have yet to sign contracts in the image of the auto settlements; so indirectly crippling strikes are still very possible.

A good example is a strike of Budd Co.'s tamping plant workers that shut down American Motors in the midst of its best sales period in history. Despite the temporary delay, Rambler deliveries are up a whopping 176% over last year, which in itself was a record.

•

Another bright note is that struggling Studebaker-Packard is solidly back in business. Dealer orders for its new Lark are already approaching 75% of the complete 1958-model run, which totaled 52,392 passenger cars.

Topping everything off is the announcement that Checker Motors Corp., a 35-year-old Kalamazoo taxicab builder, will market a family-type (seven-seater) passenger car called the Superba.

Despite its 120-in. wheel base and large carrying capacity, it will be shorter over all (200 ins.) than Fords, Chevrolets, or Plymouths. With a 140-horsepower, six-cylinder engine, it is expected to sell in the neighborhood of $2,350 without extras. Checker president Morris Markin says that production lines are geared for 100 Superbas a day, in addition to cab output.

to the same period last year.

Textile men lay the blame on government low-tariff policies that encourage foreign imports.

The government says the policies of easier trade are right but other countries have not followed Germany's liberalizing moves.

•

U. S. Investigates Dumping

WASHINGTON — The U. S. Treasury Dept. is investigating possible dumping of rayon staple fiber from France at less than fair market value.

If the Treasury Dept. decides that dumping is taking place, it will refer the case to the Tariff Commission, and customs officers will not appraise further imports for tariff duties until the matter is settled.

•

Hong Kong-Britain Deadlocked

LONDON — Negotiations between Britain and Hong Kong to limit cotton exports to Britain are now bogged down on the volume of exports. Hong Kong wants exports limited at the present level of 100-million yds. a year. Lancashire mills want the amount reduced.

Negotiations are now going on at long range between London and Hong Kong.

•

Japanese Goods to Middle East

CAIRO, EGYPT—Japan made further headway late last month in capturing Middle East markets with a new trade and payments agreement with Egypt.

Effective Nov. 28, the new agreement calls for Japan to buy $35-million worth of Egyptian products, mainly cotton, in the year begun Dec. 1.

In return Egypt will buy $26-million worth of Japanese capital goods and foodstuffs.

•

Many British Mills Obsolete

LONDON—The British textile industry needs to replace 3-million obsolete spindles, go to a two-shift basis of operation, shut down inefficient mills, and get a more-favorable tax write-off schedule, according to a report by W. T. Winterbottom, president of the International Federation of Cotton and Allied Textile Industries, to the annual conference of the Cotton Board.

Index of manhours worked in the textile industry adjusted for changes in productivity

Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954=100)	**112**	**111**	**106**
Employment (thousands) B.L.S.	952.4	950.8	999.5
Production Workers (thousands) B.L.S.	861.9	859.8	906.6
Weekly Earnings B.L.S.	$61.26	$59.95	$59.04
Hourly Earnings B.L.S.	$1.52	$1.51	$1.51
Weekly Hours Worked B.L.S.	40.3	39.7	39.1
Production Index (1947-1949=100) F.R.B.	103	103	103
Wholesale Price Index (1947-1949=100) B.L.S.	93.2	93.3	95.1
Manufacturers' Sales (million $) Commerce	1053	1077	1040
Manufacturers' Inventories (million $) Commerce	2489	2524	2631
Inventories-to-Sales Ratio	2.36	2.34	2.53
Exports (million $) Commerce	78.8	76.3	108.6
Imports (million $) Commerce	80.3	75.7	78.8
Stock Price Index (1941-1943=10) Standard & Poor's	25.44	25.43	17.19
Failures (number) Dun and Bradstreet	10	2	3

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947-1949 = 100) F.R.B.	138	137	142
Consumer Prices (1947-1949 = 100) B.L.S.	123.7	123.7	121.1
Wholesale Prices (1947-1949 = 100) B.L.S.	119.0	119.1	117.8
Population (millions) Census	172.2	171.9	169.2
Unemployment (millions) Census	3.8	4.1	2.5
Employment (millions) Census	65.3	64.6	66.0
Personal Income (billion $) Commerce	357.5	357.8	350.6

For more data, circle A-2 on Reader Service Card →

Dependability is built into Draper looms... *part by part.* Regardless of size, shape or location, each part is engineered and manufactured to precise tolerances. As a result, Draper has become the accepted name for quality and dependability throughout the textile industry.

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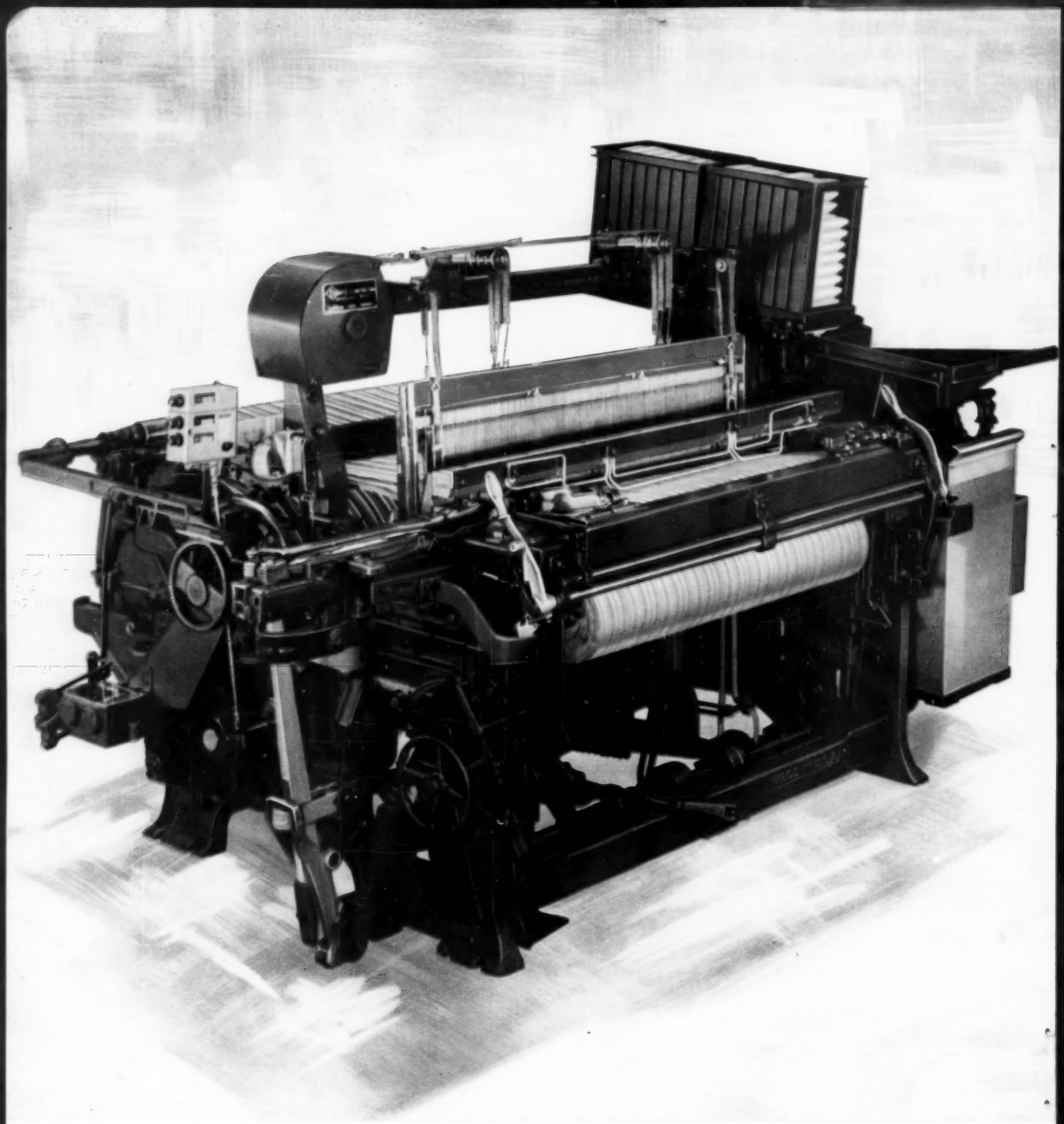

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The Wildman Jacquard "Hi Pile" knitter opens up new and broader markets in the home furnishing field.

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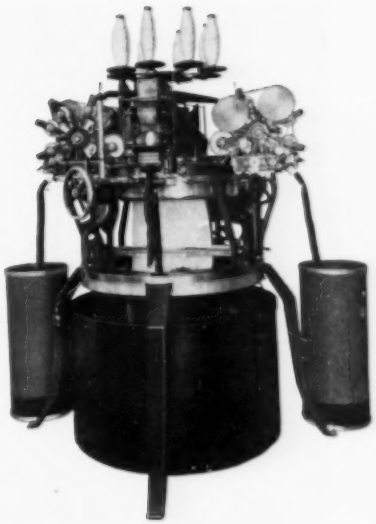

Wildman Jacquard FBW-6

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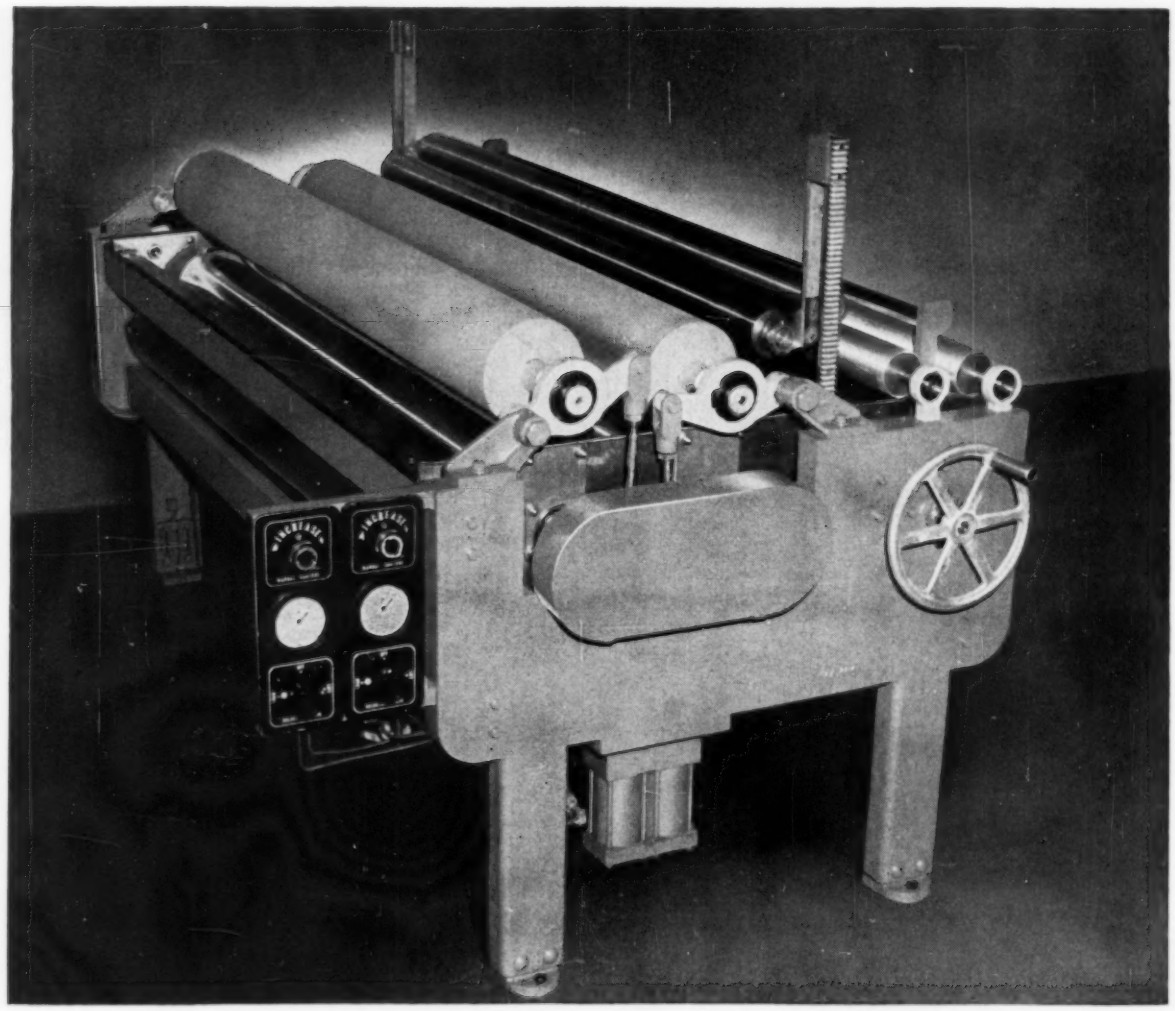

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NEWS ABOUT MILLS

Albany Felt Co., Albany, N. Y., has announced a financial working agreement with Nordiska Maskinfilt Aktiebolaget, Halmstad, Sweden. As part of this agreement, the two companies will build a new felt plant in Mexico City, Mexico, and will operate it jointly.

Botany Worsted Mills, Passaic, N. J., has leased a major portion of a one-story building to Allied Fiber Mills, also of Passaic.

Burlington Industries, Inc., Greensboro, N. C., is acquiring controlling interest in Sidney Blumenthal & Co., Inc., Rocky Mount, N. C. Blumenthal will continue to operate without any major changes.

Carrboro Mills, Carrboro, N. C., has closed with the exception of the cloth department. About 300 people have been discharged. Equipment that had been in the closed sections of the plant has been moved to other Pacific Mills' plants. The cloth department will probably close sometime this month.

William Carter Co., Needham Heights, Mass., has opened new quarters for its home offices. The three-story addition, built at a cost of $1,000,000, will increase office, warehouse, and shipping space to 400,000 sq. ft.

Chadbourn Gotham, Inc., Charlotte, N. C., and **California Hosiery Co.**, Anaheim, Calif., have entered into an agreement whereby the plant facilities and the organization of California Hosiery becomes part of Chadbourn Gotham.

Clearwater Finishing Co., Bath, S. C., has been licensed by Dow Corning Corp., Midland, Mich., to apply Syl-mer water- and stain-resistant silicone finish to decorative fabrics. The company has also completed an installation of storage racks for packaged finished goods in its 32,000-sq.-ft. warehouse.

Copimonk Finishing Co., Fall River, Mass., a wholly owned subsidiary of Debson Mill, Inc., has been formed to finish elastic fabrics and will be managed by Howard Ferguson.

Dan River Mills, Danville, Va., is building a one-story $35,000 addition to its finishing plant for the finishing of its Wrinkl-Shed with Dri-Don sheets.

Duke Hosiery Corp., Hickory, N. C., is building a 1,500-sq.-ft. addition.

Eaton Knitting Co. Ltd., Hamilton, Ont., is selling at public auction all its machinery, supplies, and miscellaneous yarns and materials.

Forstmann Woolen Co., Passaic, N. J., is transferring and consolidating the manufacturing operations of its Passic plant with other Forstmann manufacturing operations.

Fulton Bag & Cotton Mills, Atlanta, Ga., will change its name to Fulton Cotton Mills as of Jan. 1. It will discontinue manufacturing bags and concentrate on industrial fabrics. The company has also announced that it is undertaking a $2-million modernization and development program to be completed within the next few years. Special emphasis will be placed on further streamlining and enlarging the finishing departments. Equipment to process plastic-coated and wrinkle-resistant finishes will also be installed. New quilling equipment has already been installed to handle coarse yarns. Part of the modernization program also includes the addition of printing machinery for the toweling departments.

Groves Thread Co., Gastonia, N. C., is enlarging its No. 1 plant at a cost of $350,000. A two-story, 30,000-sq.-ft. addition will be built on the south side of the existing mill. The company is also air conditioning the plant at a cost of $250,000.

Harrington & Pugh Hosiery Co., Inc., Burlington, N. C., has filed a charter of incorporation. Principals are Charles Harrington and Paul and Edna Pugh, Graham, N. C.

Hazelton Weaving Corp., Hazelton, Pa., has been formed by officials of Tioga Weaving Co., Inc., York, Pa., and has bought the plant and operations shut down by Duplan Corp., Winston-Salem, N. C. Michael Stefanchick is manager and John Haesler is president.

Kayser-Roth Co., Burlington, N. C., is building a 38x60-ft. addition to its dyehouse at a cost of $35,000.

Kerr Bleaching & Finishing Works, Concord, N. C., will build a warehouse adjacent to its present building. It will be a single-story, 50,000-sq.-ft. structure consolidating warehouse facilities presently being carried out in several locations.

Morgan Dyeing & Bleaching Co., Rochelle, Ill., plans to expand its package- and skein-dyeing operations.

Peerless Woolen Mills, Rossville, Ga., will build a new 175,000-sq.-ft., one-story manufacturing plant in Tifton, Ga.

Rosemont Knitting Co., Philadelphia, Pa., has formed a new subsidiary to manufacture all types of plain and fancy knitted trimmings. The new corporation will be known as Knitted Trimming Corp.

J. P. Stevens & Co., Inc., Greenville, S. C., has announced that the Greer Plant, Greer, S. C., and the Tufting Unit, Greenville, S. C., have joined the Synthetics Div. Gaston Jennings will remain as manager of both plants and will concentrate on their merchandising coordination in the suiting and automotive fields.

Wyomissing Hosiery Mills, Mohnton, Pa., has been sold to Wm. G. Leininger Knitting Co., Inc., Mohnton, Pa., and will be operated as a wholly owned subsidiary. Wyomissing makes men's and boys' socks and misses' anklets and knee socks.

CALENDAR

December

23rd National Exposition of Power & Mechanical Engineering, New York Coliseum, New York, N. Y., Dec. 1 to 5

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 3

AATCC, Rhode Island Section, annual meeting, Johnson's Hummocks Grille, Providence, R. I., Dec. 4

AATCC, Western New England Section, Rapp's Restaurant, Shelton, Conn., Dec. 5

American Society of Mechanical Engineers, Textile Section, Statler-Hilton Hotel, New York, N. Y., Dec. 5

AATCC, Northern New England Section, Hotel Vendome, Boston, Mass., Dec. 5

Southern Textile Association, Piedmont Div., fall meeting, Johnston Memorial Y.M.C.A., Charlotte, N. C., Dec. 6

1959

January

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Jan. 7

AATCC, Hudson-Mohawk Section, Jack's Restaurant, Albany, N. Y., Jan. 16

AATCC, Northern New England Section, Colonial Club, Lynnefield, Mass., Jan. 16

Plant Maintenance & Engineering Show, Public Auditorium, Cleveland, Ohio, Jan. 26 to 29

February

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Feb. 4

March

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., March 4

American Society of Mechanical Engineers, Textile Engineering Div., annual spring meeting, Clemson House, Clemson, S. C., March 12 & 13

American Cotton Manufacturers Institute, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 19 to 21

Textile Quality Control Association, spring meeting, North Carolina State College, Raleigh, N. C., March 26 & 27

AATCC, Hudson-Mohawk Section, Chelsea House, Tribes Hill, N. Y., March 27

April

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., April 1

National Knitted Outerwear Association, annual meeting, Waldorf-Astoria Hotel, New York, N. Y., April 15 & 16

The Fiber Society Inc., spring meeting, Fontana Village, N. C., April 29 & 30

May

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., May 4 to 8

National Association of Hosiery Manufacturers, annual meeting, Claridge Hotel, Atlantic City, N. J., May 4

Underwear Institute, annual meeting, Hotel Traymore, Atlantic City, N. J., May 5

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., May 6

Tufted Textile Manufacturers Association, annual convention, cruise to Nassau from Savannah, Ga., May 8 to 13

Cotton Research Clinic, sponsored by the National Cotton Council, Grove Park Inn, Asheville, N. C., May 12 to 14

June

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., June 3

Material Handling Institute's Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12

1960

May

American Textile Machinery Exhibition, Atlantic City, N. J., May 23 to 27

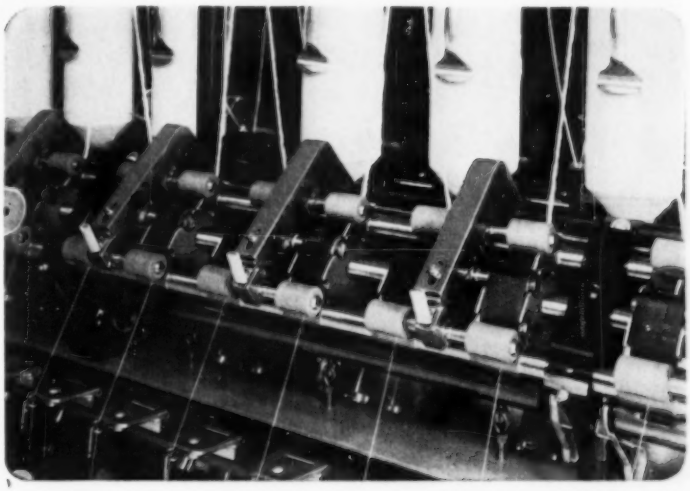
October

21st Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 3 to 7

THE MOST SENSIBLE ANSWER TO GADGET-FREE TOP ROLL SUSPENSION

ROBERTS *PosiWate* SUSPENSION SYSTEM

Elegantly simple, the Roberts PosiWate Top Roll Suspension System is completely free of hooks, unpredictable short springs and other gadgets. PosiWate recovers the best features of positive weighting and weight distribution used and proven in several million spindles insuring uniform performance from spindle to spindle.



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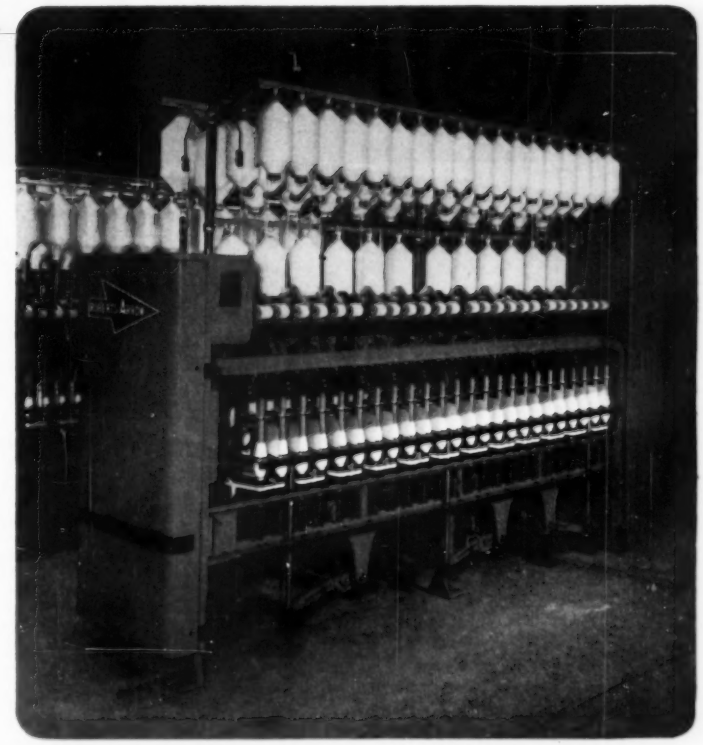
ALSO AVAILABLE AS CHANGE-OVER MODERNIZATION ON ANY MAKE OF FRAME



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ROBERTS COMPANY

SANFORD, NORTH CAROLINA

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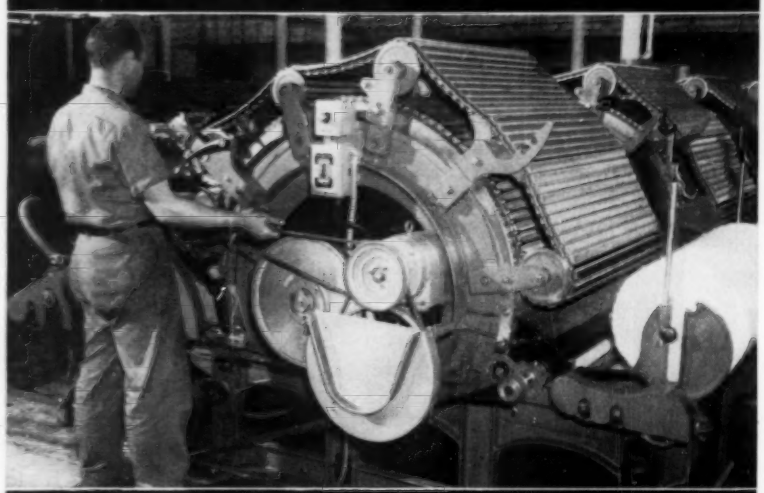

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QUESTIONS AND ANSWERS

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Raschel Power Nets Need Two Bleaching Agents

Technical Editor:
How are power nets made on raschel machines finished? (1415)

Two bleaching agents are used—one for the nylon and one for the rayon that covers the rubber. After scouring and bleaching for 30 to 45 mins. at 145° to 160° F., the fabric is extracted and dried in hot air.

The fabric is then resin treated. The viscosity of the resin must be checked constantly. Pass the fabric through a resin solution such as Carboxyl, and pass it through squeeze rolls and onto a tenter frame equipped with small pins.

Apply steam to the fabric between the entering end of the tenter frame and the oven to set the nylon. Run the fabric at 9 to 12 yds. per min., and keep the temperature of the oven to 270 to 300° F.

Power-net fabrics are sometimes put through a semidecating machine to give the fabric a flat appearance.

No special machines are used, but modifications may be necessary to present machines in the mill.

Knit Crepe-Like Fabric With Pattern Wheels

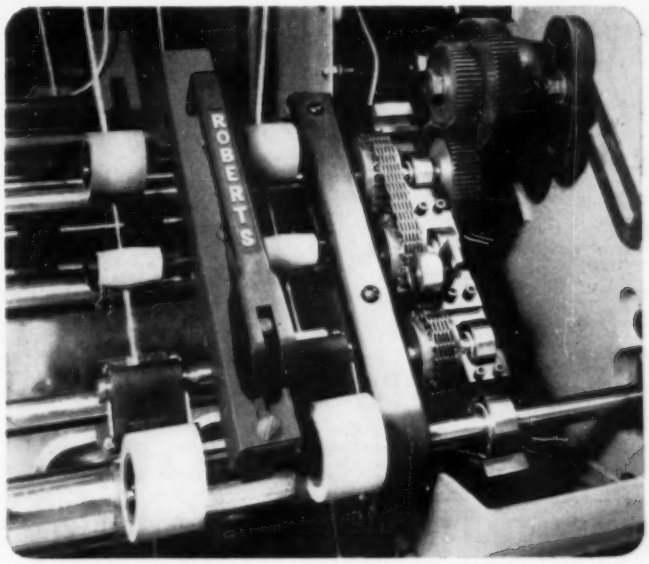
Technical Editor:
How can I make crepe-like fabrics on spring-needle knitting machines? (1385)

Crepe-like fabrics are difficult to produce on knitting machines without pattern wheels. If the pattern effect is

For more data, circle A-5 on Reader Service Card

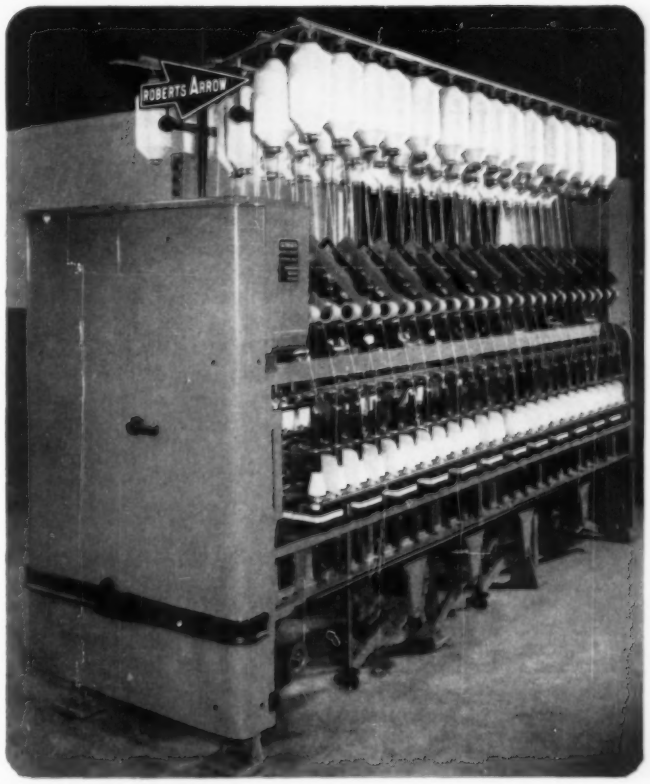
ROBERTS ARROW WORSTED SPINNING

- Any Fiber or Blend
  Synthetic or Natural
- Any Staple Length
  From Two to Eight Inches
- No Roll Setting Changes
  Needed at Any Time
- All Ball Bearing Construction
  For Smooth Operation



WITH ROBERTS *PermaSet* DRAFTING

ROBERTS ARROW



WM-2 ARROW *ShortFlo*

Rugged Chassis with Ball Bearings Throughout

Unitized Sectional Construction

Four-Roll Double Apron Drafting System

For Long-Staple Spinning, 100% or Blended

Drafts: 20 to 25 for Wool and Blends
25 to 50 for Synthetics and Blends

Front Roll Pressures from 90 to 120 pounds

UnitVac Power Suction Cleaning with Individual Removable Flutes

Roberts AeroCreel Handles Large-Package Roving

Simplified Reverse Twist Arrangement

Completely Adjustable Draft, Lay, and Twist Constants

One Master Set of Gears for All Changes

Actual mill tests have proved that the ARROW WM-2 Worsted Frame gives higher quality yarns with fewer ends down and more even running at higher drafts and higher front-roll and spindle speeds.

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SANFORD, NORTH CAROLINA

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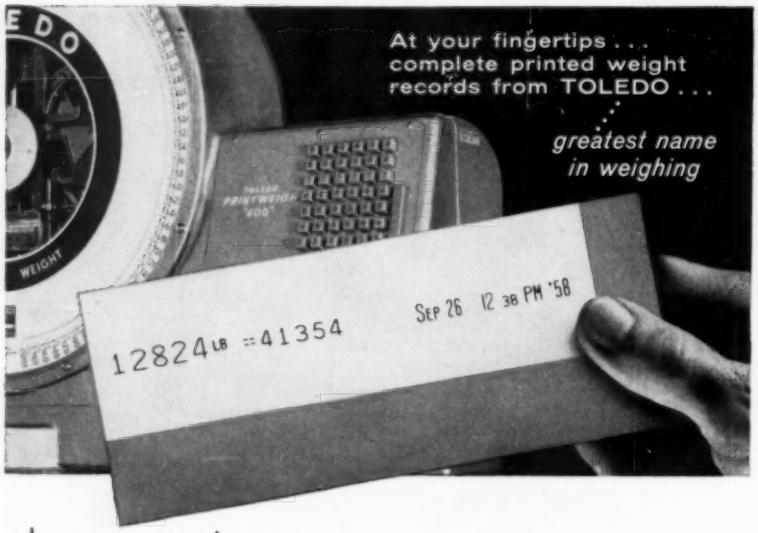

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- 6 to 12 bank selective numbering, or up to 10 weight symbol keys, available for positive weight identification. Consecutive numbering.
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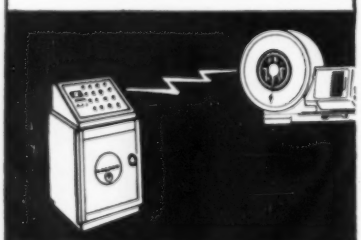

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dependent on presser or needle setouts, a vertical repeat will spoil the all-over crepe effect.

Although careful designing will eliminate any repeat effects when pattern wheels are used, the selection of a pattern wheel that is not a factor of the number of slots in the needle cylinder will eliminate design repeats with no special care in designing. For instance, a pattern wheel with 80 slots will give a decided repeat on a needle cylinder with 1,280 slots. But wheels with 79 or 81 slots will be suitable.

Wheels need to be stationed only at alternate feeds. Knit on all needles at the other feeds. Make up the pattern wheels with a repeat such as 2 in 1 out, 4 in 1 out, 1 in 1 out, and 3 in 1 out.

When you mesh the pattern wheels with the needles, don't line up No. 1 slot with No. 1 needle at all feeds. Line up No. 1 slot with No. 1 needle at No. 1 feed, but line up No. 1 slot with No. 12 needle at No. 3 feed. Line up No. 1 slot with No. 7 needle on No. 5 feed on six-feed machines. No. 1 slot should be lined up with No. 5 needle on No. 7 feed on eight-feed machines.

Stop Making Ends Down In Dacron-Wool Blends

Technical Editor:

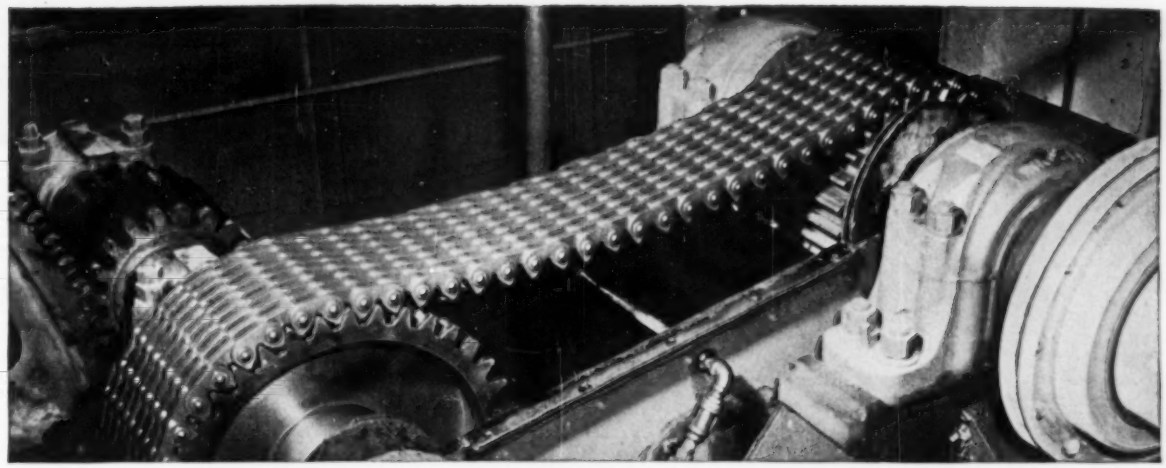
We have trouble with Dacron-wool blends on drawing sets because ends break when they run from the creel. This trouble occurs at the top or bottom of the bobbin and results in a single that must be made into waste. Do you have any suggestions? (1417)

The lifter motion in open drawing is the mangle-wheel type that gives a fixed length of traverse to the bobbin. The distance between the bobbin flanges is usually 14 ins. If the slubbing is 1 in. in diameter, then 14 coils would cover the bobbin barrel.

The length of the traverse is only 13 ins.; so if you are winding a thinner slubbing than before, the bobbin is building with an underwind. The slubbing does not run out freely in the creel but digs into the flange and breaks down.

You can't make a heavier slubbing because of drafting difficulties. The only remedy is to alter the rack-lifting pinion wheels. These are not standard change points, but spinning draft wheels may be drilled and tapped for setscrews and used.

At the dandy rover, the length of traverse can be increased by inserting slips of metal between the winding barrel and the lifter chain.



HIGH SPEED. Traveling at speeds as high as 5000 fpm, silent chain drives readily accommodate the extreme peak loads without losing their better-than-98% efficiency.

How LINK-BELT silent chain drives survive industry's roughest requirements

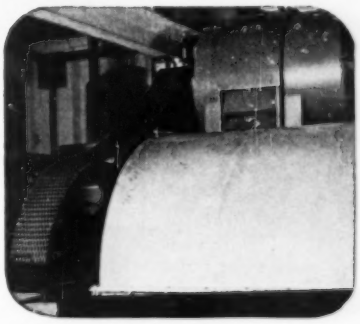
Would your drives do as well?

On applications like these and scores more, no other type of drive is the equal of Link-Belt silent chain. Ask your Link-Belt office or authorized stock-carrying distributor for comprehensive 88-page Book 2425.

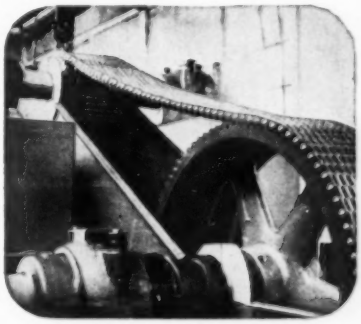
LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

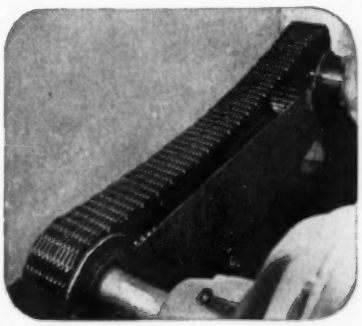
LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World. 14.579



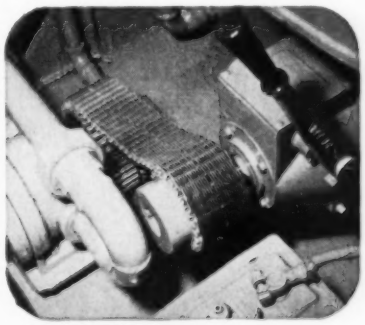
LARGE OR SMALL HP. On a 300 hp drive like this or at fractional hp, silent chain is always lower in ultimate cost.



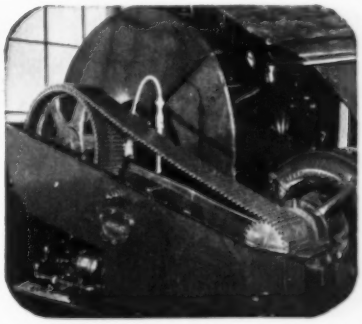
LARGE RATIOS. Link-Belt silent chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



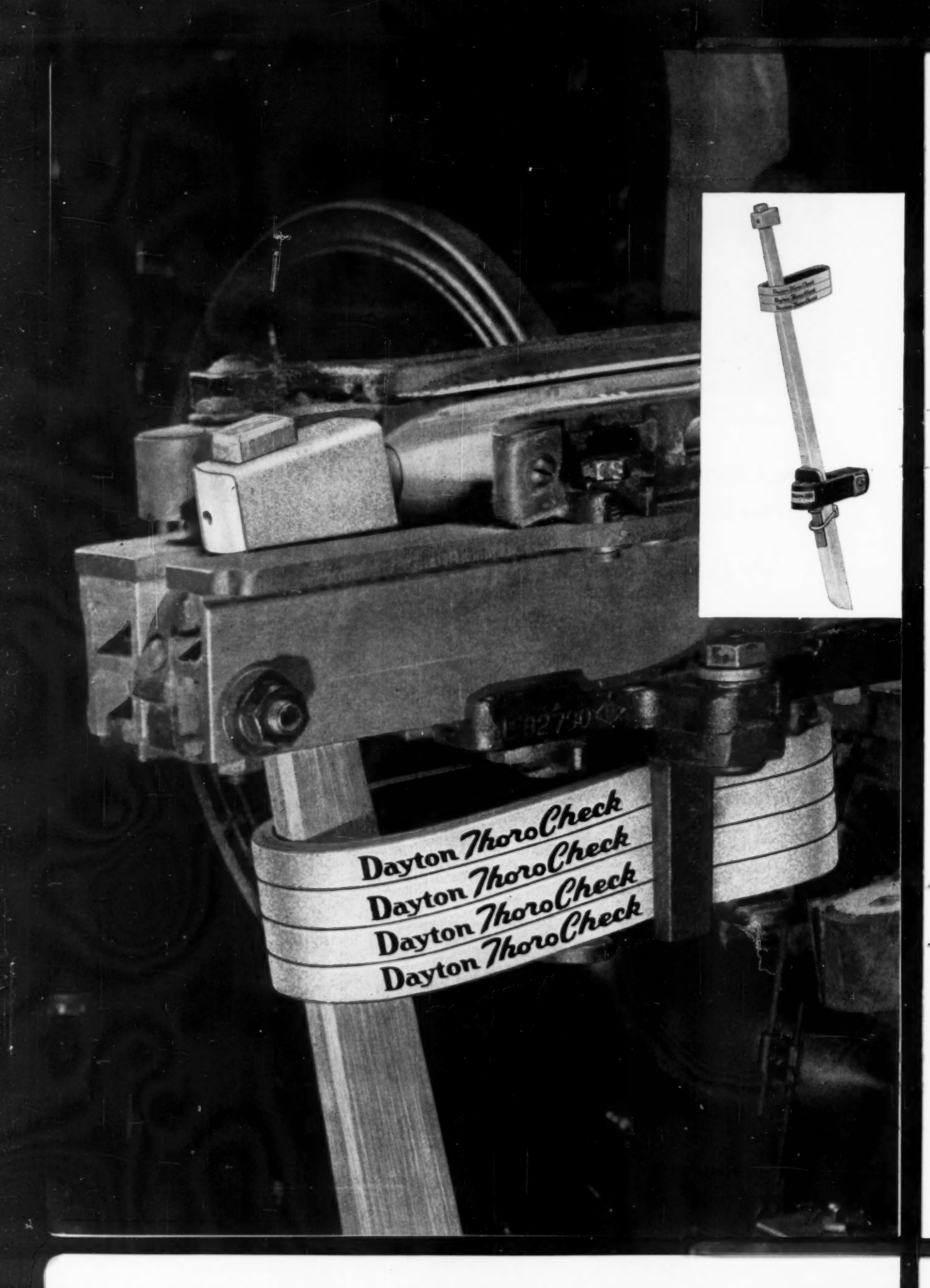
ADVERSE OPERATING CONDITIONS. Heat, humidity and cold have little effect on Link-Belt silent chain drive performance.



LIMITED SPACE. Easy to assemble in close quarters, Link-Belt silent chain permits built-in drives, compact housings.



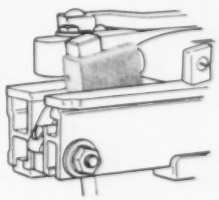
LONG LIFE. This drive is 16 years old and still going strong. Not unusual—many others have lasted twice that long.


Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck

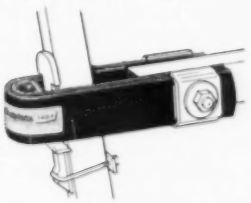
Protect Your Looms

From Shock and Wear with the Dayco Combination

WHY TAKE CHANCES with your looms when you can protect the picking assembly at every point of shock and wear with Dayton Thorobred Loop Pickers, Thoro-Check Straps and Deluxe Lug Straps? Designed to work together as smooth running combination, they absorb the shock of high speed shuttles, smoothly check the picker stick, and accurately deliver the shuttle return. Lasting 2 or 3 times longer than similar products, the Dayco Picking Combination reduces both the cost of replacing parts and the downtime it takes to make repair.

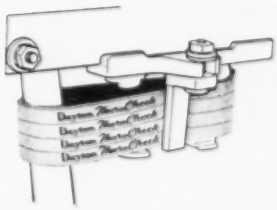


DAYTON THOROBRED LOOP PICKERS are scientifically designed to avoid wear. Examine them point for point . . . the tilt of the picker face is just right for perfect, strain-free shuttle contact . . . the tapered picker stick hole and tapered bottom insure accurate seating and protect against tearing the loop ply . . . and the smooth, round corners prevent jerked-in fillings. It all adds up to millions more wear-free contacts.



DAYTON THROBRED DELUXE LUG STRAPS are molded together around a built-in plug that absorbs the terrific shock generated during picker stick thrusts. This one-piece, link-free construction means longer service and greater protection for the stick and loom.

DAYTON ENDLESS THORO-CHECK STRAPS have a superior checking action and a stronger multi-ply construction that add 6-8 months more of trouble-free service. Because of their smooth, graduated checking action, Dayton ThoroCheck Straps never drag over the stick, never interfere with the shuttle throw.



Check the results yourself by refitting some of your looms with the complete Dayton combination and comparing its long life, freedom from downtime, and smoother picking action. Just ask your Dayco representative next time he calls or write The Dayton Rubber Company, Textile Div., 401 S. C. National Bank Building, Greenville, S. C.

Dayton Rubber

Dayco And Thorobred Textile Products For Better Spinning and Weaving

© D. R. 1958

OVERSEAS PLANT: THE DAYTON RUBBER CO., LTD., DUNDEE, SCOTLAND

For more data, circle A-9 on Reader Service Card

FAMOUS TEXTILE MILL* PRAISES

NEW AUTOMATIC STOP AND GO CONTROL

Spinner illustrates the ease of Stop and Go Control on Bahnson Cross-Jet Cleaner.

EXCLUSIVE WITH THE

Bahnson CROSS-JET CLEANER

Officials at this top textile mill report,*

"Cross-Jet's exclusive Stop and Go control permits total cleaning without costly production interruptions. Cross-Jet comes to a standstill automatically with a slight pressure against the flexible trunk. It can be stopped by a doffing cart standing in the aisle. It will not push the cart nor will its flexible trunk flop over into the frame endangering yarn spinning. A spinner can continue her task at the frame with safety and efficiency. Our production costs have been reduced . . . our yarn quality has been greatly improved since we installed the Cross-Jet Cleaner."

HELPFUL ANALYSIS WITHOUT OBLIGATION

Let a Bahnson representative analyze your cleaning problems and make recommendations for your needs. Write Bahnson today!

**Name of mill upon request*

AUTOMATIC FLOOR SWEEPING AND LINT REMOVAL BY VACUUM
can be added to the Cross-Jet without an additional traveling cleaner.

Bahnson *AIR-O-MATION*
Air at Work for Increased Profits

THE BAHNSON COMPANY—WINSTON-SALEM, N. C., U. S. A.

For more data, circle A-10 on Reader Service Card

For more data, circle A-11 on Reader Service Card→

FINEST *Quality*

Flat Steel Heddles Since 1897 from Stehedco

Preferred by ninety-nine out of a hundred mills for longer, trouble-free production.

Ever since flat steel heddles were first introduced to America by Steel Heddle Mfg. Co., the highest standards of quality have been maintained. You can depend on STEHEDCO.

Stehedco has always been first to introduce the newest improvements, and there are Stehedco flat steel heddles of every type for every kind of weaving. They are expertly made of finest quality steel, highly polished to handle your most delicate yarns or heaviest fabric.

Make your next order for Stehedco Quality heddles.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

H-5810

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

For more data, circle A-10 on Reader Service Card

For more data, circle A-11 on Reader Service Card

Stainless Steel

QUICK WAY to reduce electrical raceway maintenance in highly corrosive atmospheres to a minimum is to install Republic "Dekoron-Coated" Electrical Metallic Tubing or Rigid Steel Conduit. A tough, polyethylene coating over a galvanized finish gives you double protection against corrosion from outlet to outlet. Installation is easy. Joints are sealed with plastic tape. "Dekoron-Coated" E.M.T. and Rigid Steel Conduit cost less because they last longer. Mail coupon for details.

N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

Permits Quick Color Changes

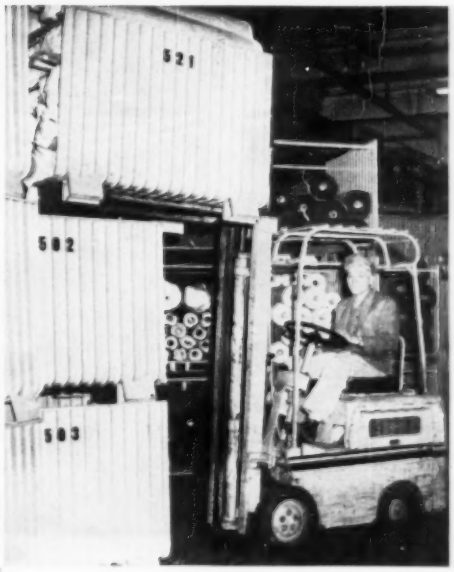
Easy-clean qualities of textile equipment fabricated from Republic ENDURO® Stainless Steel make possible quick color changes and economical processing of small runs.

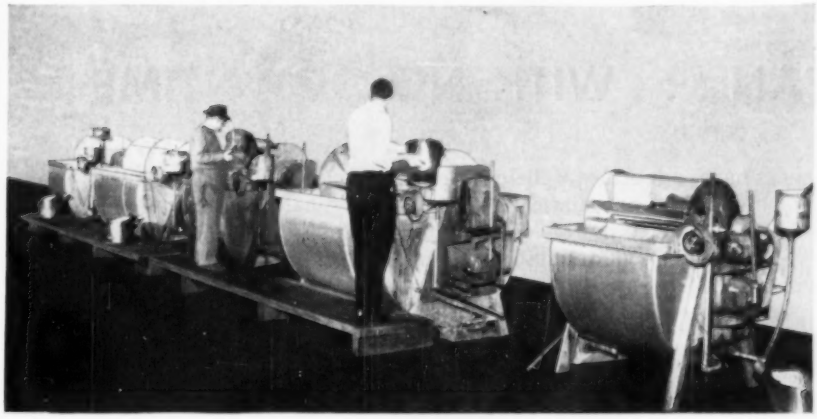
Stainless steel is easy to clean and to keep clean. A water rinse quickly restores its smooth, hard surface to sparkling cleanliness. There is no need for expensive boil-outs—no need for using caustic, reducing, or oxidizing agents to remove dyes.

There is no danger of off-colors caused by metallic oxides. ENDURO Stainless Steel stubbornly resists rust and corrosion. It is non-contaminating. It does not react with or absorb dye-bath chemicals or peroxide bleaches. Considerably smaller quantities of these chemicals are required to maintain necessary concentrations.

Flexibility is still another advantage of stainless steel equipment. You can use the same equipment for dyeing, rinsing, or bleaching. In fact, the use of stainless steel made possible the continuous bleaching process. ENDURO Stainless Steel is the metal that assures true dyed colors and pure bleached whites. It's the metal that's safe for the most delicate colors and fabrics. Your equipment supplier has more facts. Or send us the coupon.

This example of the advantages of stainless steel is brought to you by Republic Steel in behalf of the stainless steel equipment manufacturers and the Republic Stainless Steel Distributors—your local steel service centers.





QUICK HANDLING and simplified storage at reduced cost are the results of this special materials handling equipment developed by Republic's Berger Division for a dye house. Open-end construction of the boxes permits easy access to bolts of cloth. Offset channels under each unit allow tiering, save space. Four-way entry permits easy handling in limited space. Send coupon for more facts.

QUICK COLOR CHANGES are but one advantage of equipment made from Republic ENDURO Stainless Steel. Here is a metal that produces immediate savings in maintenance and cleaning costs. Produces long-range savings in extended equipment life. ENDURO is the metal that can help you achieve faster production, lowered costs, higher quality.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

REPUBLIC STEEL CORPORATION
DEPT. TW-5114-R
1441 REPUBLIC BLDG. • CLEVELAND 1, OHIO

Send more information on:

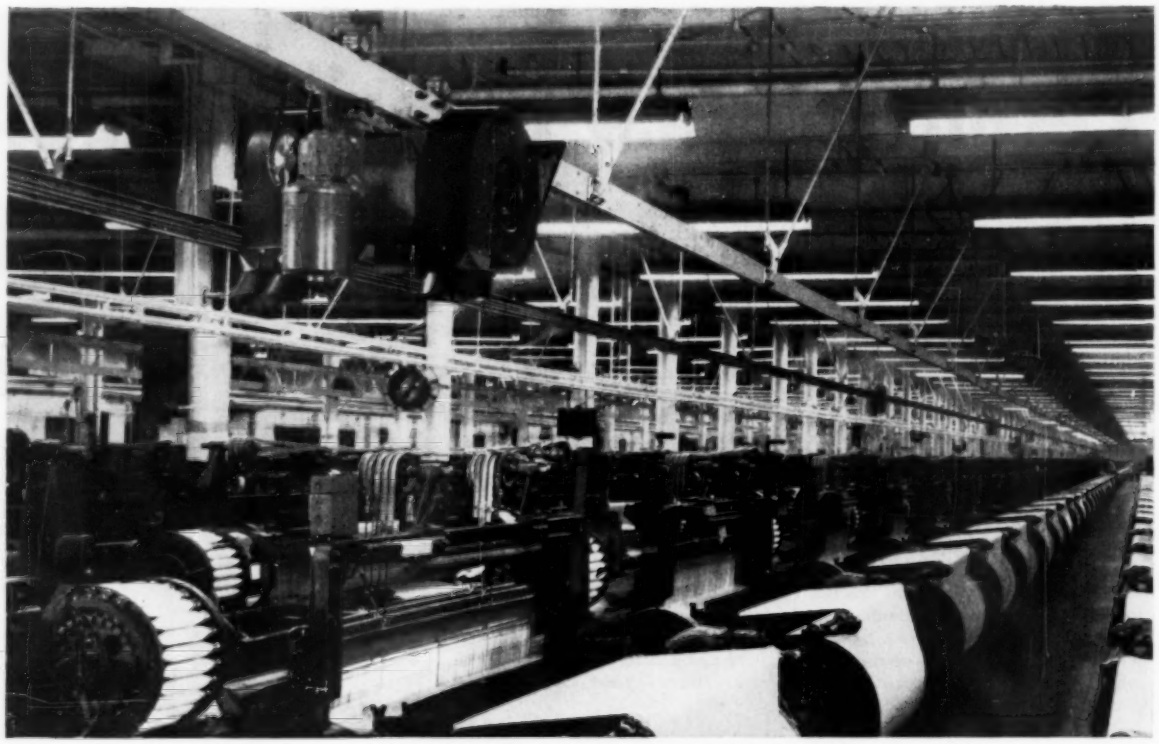
☐ ENDURO Stainless Steel ☐ Materials Handling Equipment
☐ "Dekoron®-Coated" E.M.T. and Rigid Steel Conduit

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____



AUTOMATIC CLEANING where overhead track brings full air sweep of loom cleaner to every loom on the floor, without disrupting loom operation, keeping looms free of accumulated waste.

KEEPS LOOMS CLEAN . . . WITH NO DOWNTIME

In mills where Amco Heliclone Loom Cleaners have been installed, new high-quality production standards are being established.

The swiftly whirling outlet nozzles, driven by powerful air streams, direct high velocity jets of air in overlapping, circular paths resulting in a rapid series of sharp puffs over loom and warp surfaces. At the same time, supplementary air outlets clean overhead track and ceiling.

Automatic cleaning with Heliclones largely eliminates end runs and floats, waste bunches, end breakage, overshots, broken picks, and oil spots caused by loose accumulated waste. Of course, it completely eliminates the old-fashioned method of manual cleaning, which is a constant source of accidents and cloth imperfections, and is so costly in terms of labor and downtime.

Amco Heliclone Loom Cleaners may be used for the automatic cleaning of practically *all* makes and types of looms. A unit similar to the Heliclone is also available for winder cleaning. Write American Moistening Company for further facts.

- Keeps looms and ceiling free of accumulated waste
- Cuts loom cleaning and costly downtime
- Improves production and quality of fabric
- Reduces fire hazard
- Improves weave room appearance
- Can be used with beam handling equipment

AMCO HELICLONE® LOOM CLEANER

Pat. Pend.

AMERICAN MOISTENING COMPANY

Since 1888

Makers of Air Conditioning Systems and Textile Mill Equipment

Home Office and Plant: Cleveland, N. C. — Branches in Atlanta, Providence, Toronto

For more data, circle A-13 on Reader Service Card

For more data, circle A-14 on Reader Service Card→

SHORTER DYEING CYCLES: FINER FABRICS!

National
LANAMID®
Premetalized Dyes!

When you want to protect the hand . . . preserve surface effects . . . or up-grade the quality of your fabrics—it's wise to choose your dyes from the new, neutral dyeing LANAMID range.

They give you maximum all-around fastness on wool, silk, nylon and modified acrylics . . . *without extended processing!* Inherent fiber characteristics are retained and substantial dyeing time is saved.

LANAMID Dyes exhaust smoothly to produce extremely level results even on tightly woven piece goods. Since they are non-selective, LANAMIDS give uniform coverage of varying grades of wool, free of skitteriness.

There are 16 dyes presently in the range . . . and more on the way. With surface effects and textures getting renewed attention, you will want to be fully informed on the LANAMIDS. Your National Aniline representative will gladly furnish shade card and samples.

Allied Chemical

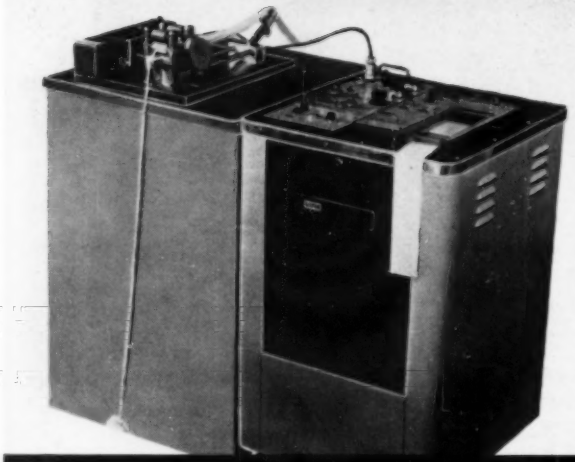
NATIONAL ANILINE DIVISION

40 Rector Street, New York 6, N. Y.

Atlanta Boston Charlotte Chattanooga Chicago Greensboro
Los Angeles Philadelphia Portland, Ore. Providence San Francisco

USTER LICKS YOUR FIBER DRAFTING PROBLEMS!

WEST POINT COHESION TESTER PREDICTS!



PREDICTS effect of roll spacing

PREDICTS effect of bi-directional drafting

PREDICTS effect of humidity

PREDICTS effect of draft

Provides fast and efficient cohesion test for maximum fiber control and proper blending in processing. Eliminates numerous tests for fiber length, fiber fineness, surface characteristics, wax content, etc. Compensates for variations in raw material to achieve optimum twists for roving. Determines drafting properties of synthetic, natural and blended staples. 1⅛" minimum, 8" maximum roll setting.

THE USTER SPECTROGRAPH PROVES!

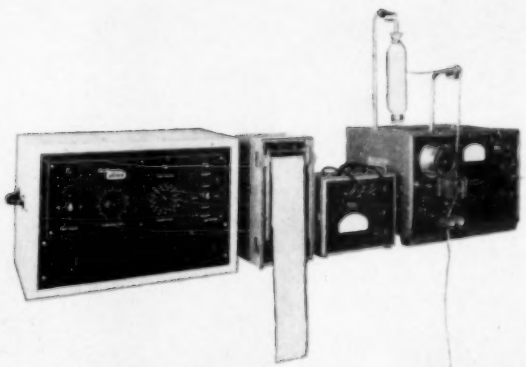
PROVES production machinery settings

PROVES mechanical condition of machines

PROVES short, medium, long term variations

PROVES final fabric appearance in 4 to 6 minutes

The Uster Spectrograph introduces an entirely new concept of fiber control during processing. The Spectrograph describes mechanical troubles and machinery setting faults in the drafting zone. Simultaneously with the operation of the Evenness Tester, the Spectrograph automatically analyzes short, medium and long term variations. The result is stored on numerous channels with the Spectrogram chart delivered in 4 to 6 minutes.



FOR THE COMPLETE PICTURE WRITE, WIRE OR PHONE USTER.

SALES OFFICES:

U. S. Sales Offices: Atlanta, Georgia

Canadian Sales Offices: Hugh Williams & Company, 27 Wellington St., East Toronto 1, Ontario

USTER CORPORATION CHARLOTTE NOR. CAROLINA

USTER

CONTINUOUS QUALITY CONTROL IN MANUFACTURING

For more data, circle A-15 on Reader Service Card

ND FACTS

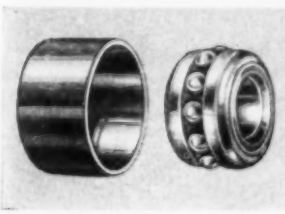
HERE'S NEW DEPARTURE'S COMPLETE LINE OF SEALED BALL BEARINGS FOR TEXTILE MACHINERY

New Departure textile bearings are made with integral closures to prevent leakage of lubricant and contamination of goods. All are smooth running, low friction ball bearings permitting higher speeds for faster production—longer service life.

Many are lubricated and sealed for life. Others use New Departure's Injection-Relubrication system. This permits revitalization of bearing lubricant for increased bearing life.

Write for full information on New Departure textile ball bearings, or call your New Departure sales engineer. Naturally, there's no obligation.

SEND FOR TEXTILE BALL-BEARING CATALOG TEX-1, NEW DEPARTURE, BRISTOL, CONN.

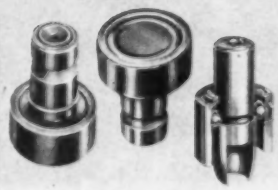


SPINDLE BEARINGS

. . . Cylindrical outer race permits removal of spindle from bolster without removing bolster from rail. Used for step bearings, but also used in high-speed spindle applications.

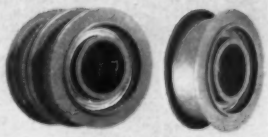
TREADLE ROLL BEARINGS

. . . permanently lubricated for long service. Designed to eliminate sparking. Double seals prevent leakage of lubricant, keep out dirt and lint.



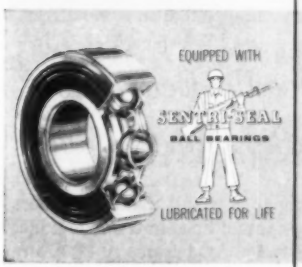
TENSION PULLEY BEARINGS

. . . available for both vertical mounting of idler or tension pulleys or horizontal mounting of tape tension pulleys.



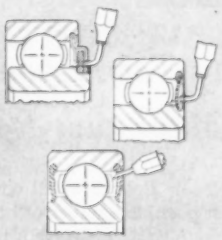
SHEAVE BEARINGS

. . . for automatic looms. Self-sealing assures protection for textiles, eliminates relubrication problem. Designed to permit nesting in gangs on harness sheave supporting shaft.



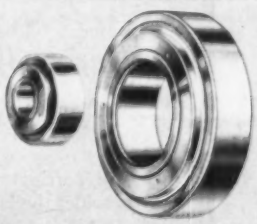
SENTRI-SEALS

. . . keep lubricant *in*, seal *out* dust, dirt and moisture for life. Sentri-Seals are synthetic rubber with spring steel rings molded in. Available in a wide variety of ball bearings.



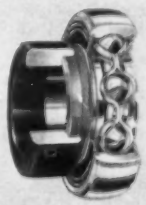
INJECTION-RELUBRICATION SYSTEM

Hollow needle and metering oiler extend grease life in bearings for many months in high-speed, long-service applications.



FELT SEAL

. . . annular ball bearings are protected from dirt, retain lubricant by integral felt closures. Complete line from 5mm. to 2¾" bore. Relubricated by injection-relubrication.



ADAPTER BEARINGS

. . . easily applied to shafts; positive lock. Pre-lubricated, sealed. For moderate loads and speeds. Spherical or cylindrical O.D. for shafts ½" to 2 7/16" dia.

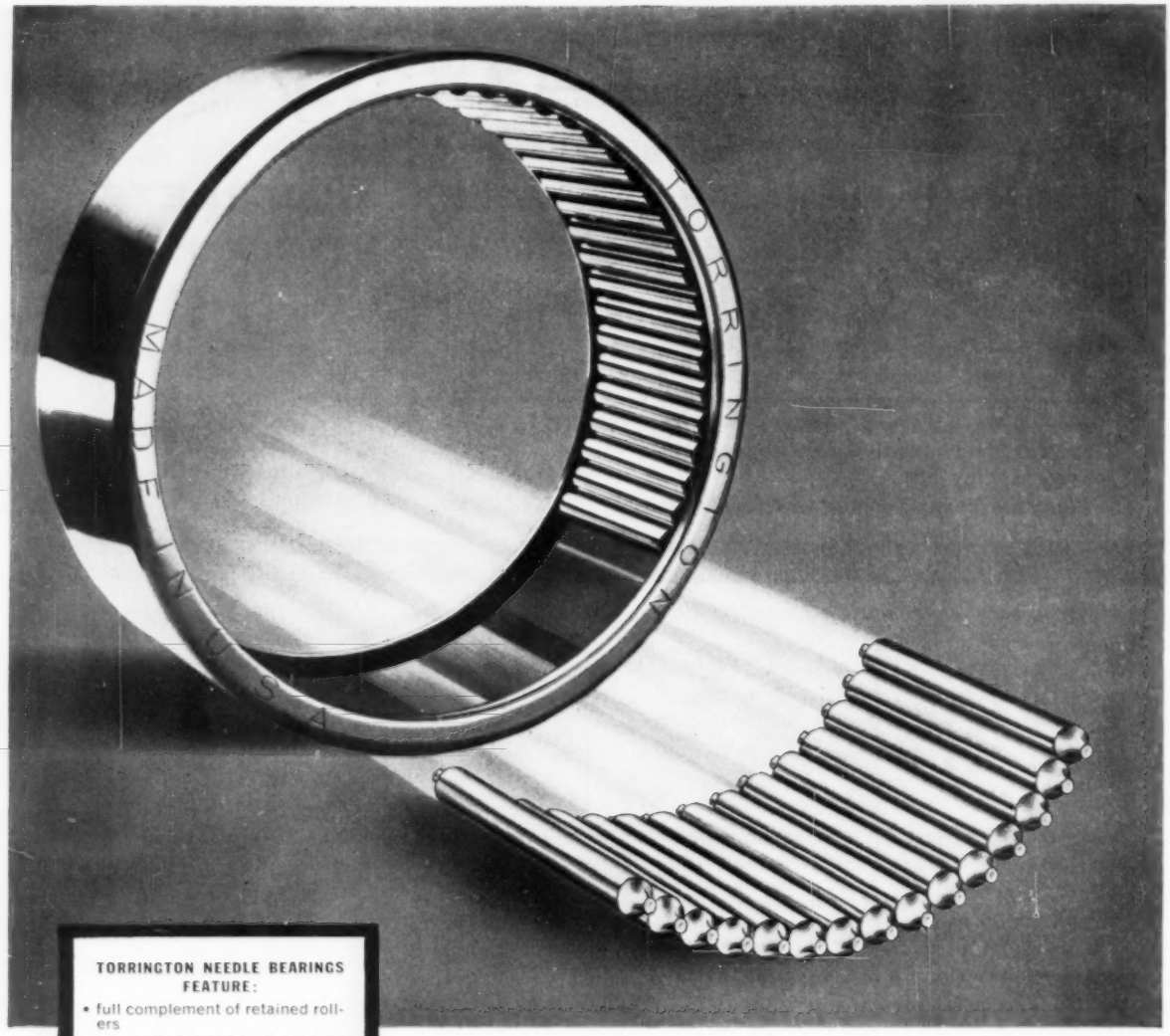
Available through United Motors System and its independent Bearing Distributors.

ND NEW DEPARTURE

DIVISION OF GENERAL MOTORS, BRISTOL, CONN.

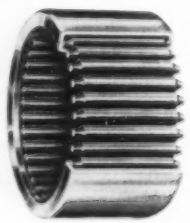
NOTHING ROLLS LIKE A BALL

For more data, circle A-16 on Reader Service Card



TORRINGTON NEEDLE BEARINGS FEATURE:

- full complement of retained rollers
- unequalled radial load capacity
- low coefficient of starting and running friction
- low unit cost
- long service life
- compactness and light weight
- runs directly on hardened shafts
- permits use of larger and stiffer shafts



Here's Why Torrington Needle Bearings Provide Maximum Radial Load Capacity

The Torrington Needle Bearing's full complement of small diameter rollers provides the largest possible number of bearing contact lines in the load zone.

This feature gives Needle Bearings a higher radial load capacity than any other bearing of comparable size. Precision rollers ensure smooth anti-friction performance with low coefficient of starting and running friction, to match this unequalled capacity. Rollers are positively retained by the turned-in lips of the outer shell, permitting simple, economical installation and assembly.

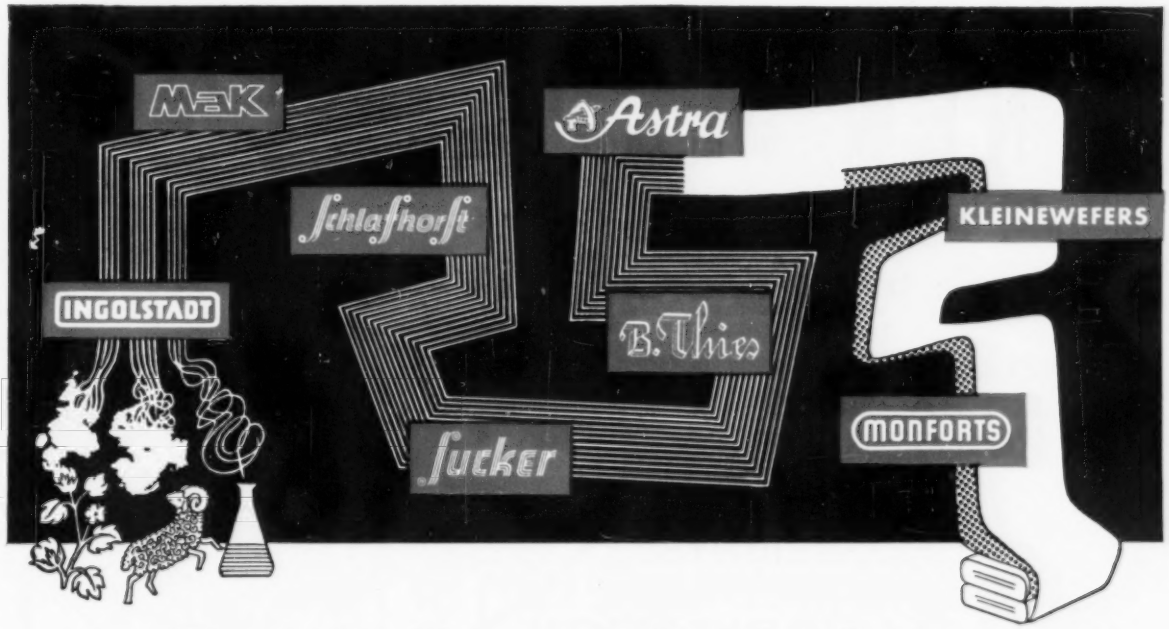
Torrington experience spans twenty years in design and application of Needle Bearings to equipment of all types. This experience is at your disposal to help you secure the ultimate in performance built into every Torrington Needle Bearing. **The Torrington Company, Torrington, Conn.—and South Bend 21, Ind.**

TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • BALL • NEEDLE ROLLERS • THRUST

For more data, circle A-17 on Reader Service Card



From the fibre to the finished fabric

UNIONMATEX *advises you, plans expertly and delivers*

textile machinery for your new projects, mill additions and mill modernisation

INGOLSTADT Spinning Machinery for cotton, artificial staple-fibre and worsted
MAK Card Sets · Self-acting Mules · Ring spinning Frames
SCHLAFHORST Machines for winding-warping and sectional warping
SUCKER Sizing Machines · Size Mixing and Cooking Installations
THIES Dyeing and Bleaching Plants for yarns and card-slivers of all kind
ASTRA Weaving Machines for cotton-, wool- and special fabrics e. g. feltcloths · Jacquard-weaving Machines
KLEINEWEFERS Calenders · Mangles · Printing-, Mercerizing machines · Continuous Bleaching and Dyeing Plants
MONFORTS Finishing Machinery · Measuring, Inspecting, Plaiting, Rolling and Doubling Machines for all kinds of cloth

NET

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CABLE: UNIONMATEX · TELEX: 0412487 · TELEPHONE: 95168/93522

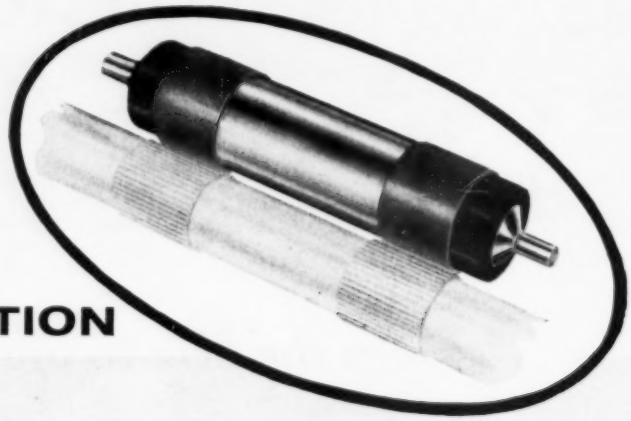
For more data, circle A-18 on Reader Service Card

NEW MagneTrol

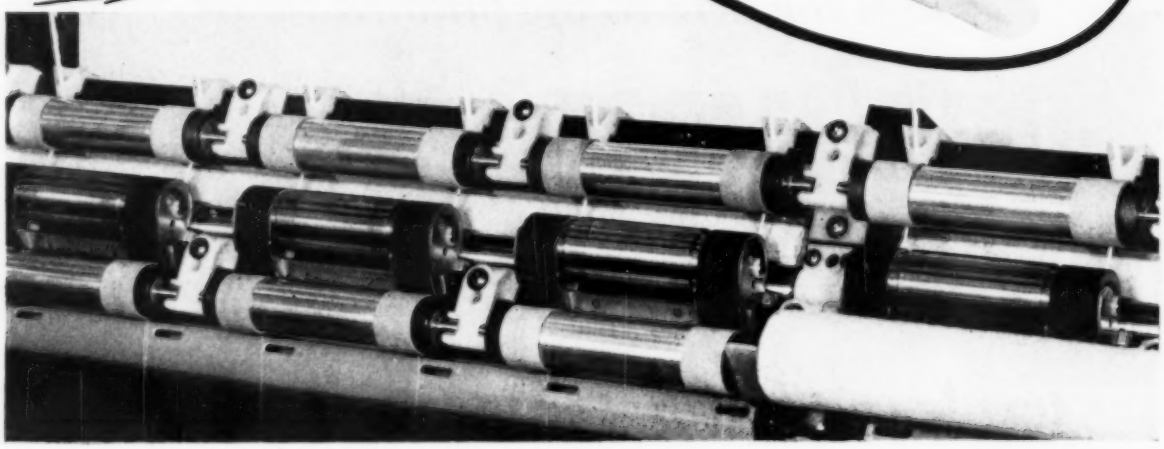
pressure system for drafting

by SACO-LOWELL

NO CAP BARS
NO SADDLES
NO STIRRUPS
NO LEVERS
NO SPRINGS
NO WEIGHTS



Plus **NO LUBRICATION**



The MagneTrol Pressure System by Saco-Lowell uses the force of magnetic attraction to produce required pressures — does away with all auxiliary equipment. Most important of all, the MAGNETROL System requires NO LUBRICATION above the roller beam.

- **NO LUBRICATION ABOVE THE BEAM**
- **EXCEEDINGLY FEW COMPONENT PARTS**
- **EFFICIENT CLEANING ACTION OF THE CLEARERS**
- **ELIMINATION OF PROBLEM OF WORN NECKS ON STEEL ROLLS**

MAKES ANY DRAFTING ELEMENT WITH MAGNETROL THE CLEANEST MOST EFFICIENT EVER DEVELOPED

THE STANDARD OF QUALITY AND PERFORMANCE Since 1813

SACO-LOWELL TEXTILE MACHINERY DIVISION
SACO-LOWELL SHOPS
Executive & Sales Offices — EASLEY, S. C.
Branch Sales Offices — ATLANTA, GA., BOSTON, MASS., CHARLOTTE & GREENSBORO, N. C.

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

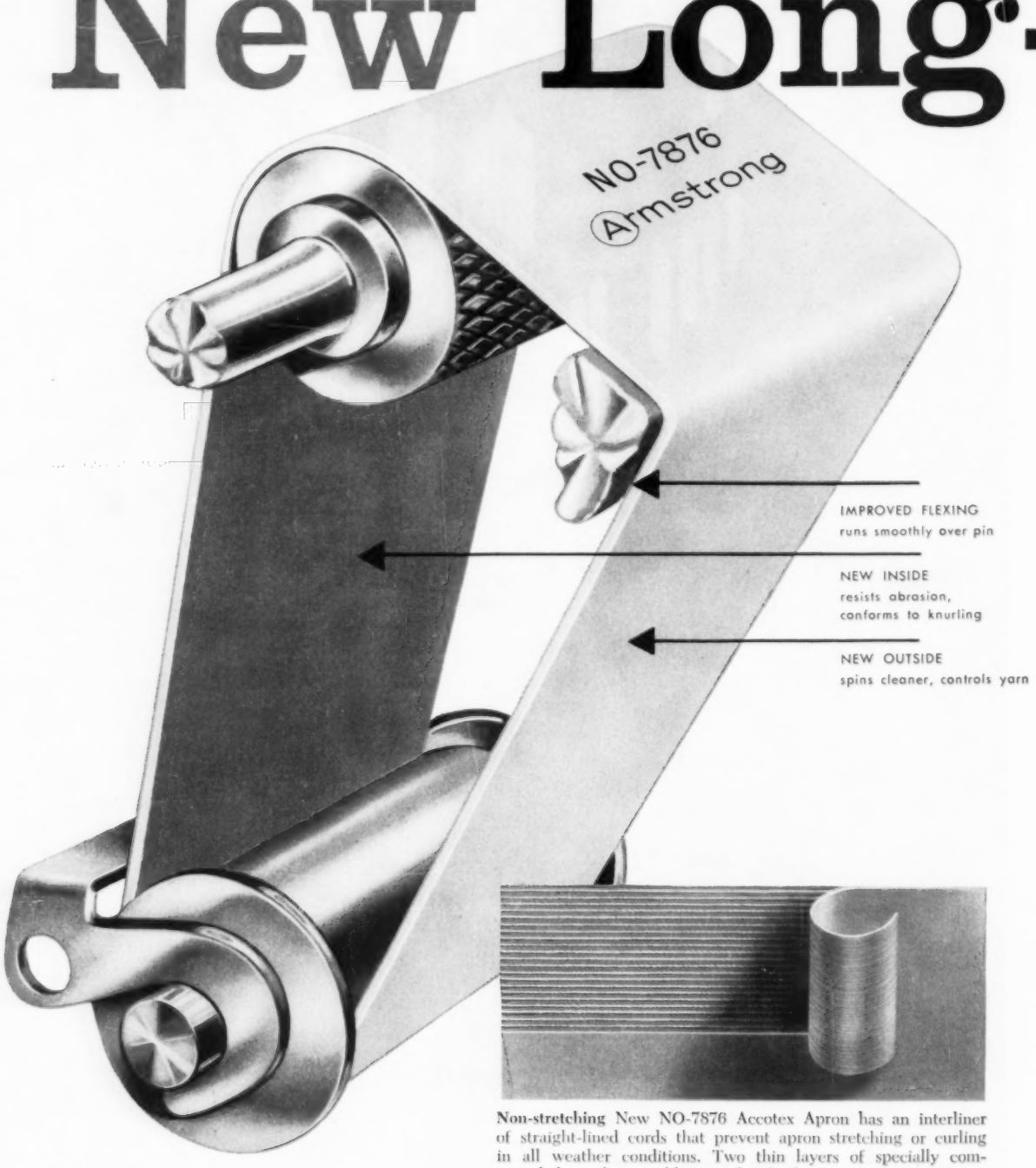
SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE AND WORSTED

Planning and supply of complete spinning plants based
on latest experience in spinning technology and mechanical engineering
Spares for spinning machinery · Conversions of draft systems

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY

New Long-



Non-stretching New NO-7876 Accotex Apron has an interliner of straight-lined cords that prevent apron stretching or curling in all weather conditions. Two thin layers of specially compounded synthetic rubber sandwich this core.

For more data, circle A-21 on Reader Service Card

Life Apron

Armstrong development produces bottom aprons that bring new economy to long-apron systems

You'll be able to measure the life of your bottom aprons in years, not in months, when you equip your long-apron frames with the new Accotex NO-7876 Apron. This new thin-wall spinning apron has been running in test mills for nearly two years—and in every case, it's still in excellent operating condition.

The NO-7876 uses the same two-compound principle that has been so successful on double-apron systems. To meet the different conditions on long-apron systems, however, two entirely new rubber compounds had to be formulated for the NO-7876.

The rubber on the outer surface has greatly improved resistance to ozone and flex cracking. And it has the right fiber handling characteristics to insure good yarn control.

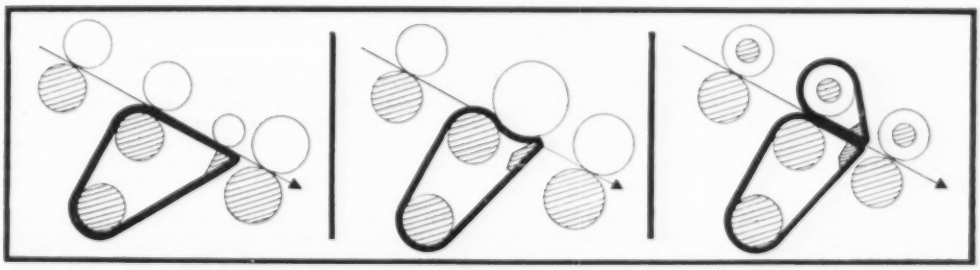
The inner surface is made of an abrasion-resistant rubber that has unusual conformability to the drive roll knurling. This assures accurate tracking and full power transmission. This inner surface also has a low coefficient of friction, allowing the apron to run smoothly over the nosebar without tucking or jamming.

These new rubber compounds help to give the NO-7876 long life. But there's more to good apron performance, of course, than long life. The NO-7876 incorporates all the time-tested features that have been built into millions of Accotex Aprons which are now helping mills turn out quality yarn.

One of the most important features is the patented seamless construction that uses a strong cord interliner to prevent stretching and curling. This construction also helps to give the super-flexibility required for good performance on long bottom apron systems.

In addition, the rubber compounds in the NO-7876 Aprons have built-in electrolytes that help to reduce the build-up of fibers on the apron surfaces.

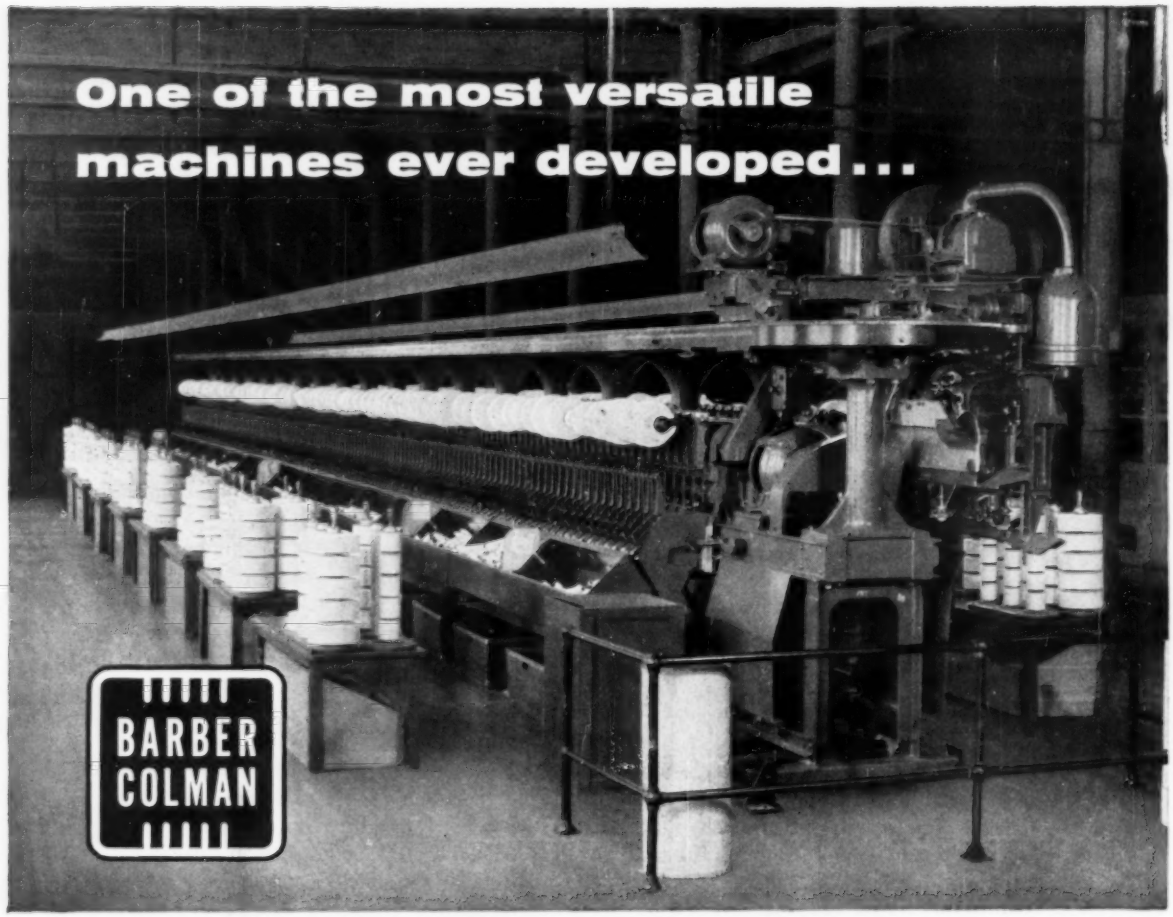
Ask your Armstrong man for more information on the new NO-7876 Accotex Apron. He'll help you set up a test in your mill. Or write to Armstrong Cork Company, Industrial Division, 6412 Dauphin Street, Lancaster, Penna.



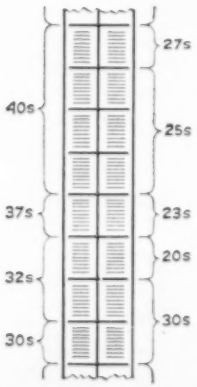
The Accotex NO-7876 is designed for use on spinning systems such as these.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts



MULTIPLE-COUNT SPOOLER



Sale yarn mills and producers of piece goods that use various counts of different mixtures will find that this machine can be a very profitable investment. It is the famous and familiar Barber-Colman Automatic Spooler, but now you can wind . . .

A DIFFERENT COUNT EVERY 9 UNITS

The machine is built in "bays" between posts that support the traveler track, with nine bobbin-to-cheese winding units in each side of each bay. Empty bobbins, instead of being conveyed to a single sorting table, drop into separate boxes under each bay, thus enabling each group of nine units to be loaded and run with a different yarn. Starter boxes and cheese tables are set up individually for each bay. The only limitation is that the extremes of different counts on the machine at any one time must fall within the range of the knotter in the traveler. Changes can, of course, be readily made at any time, and any number of bays can be run on identical yarns. (Note the dividers between the bobbin trays on the machine shown above.) *Full details on the many adaptations of this versatile machine can be obtained from your Barber-Colman representative.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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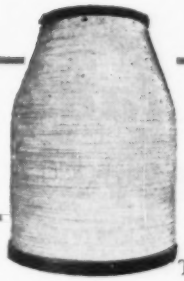
Batliboi & Company Forbes Street, Fort Bombay, India	J. Ribasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. Avenida Rio Branco No. 50, Rooms 1201/3 P. O. Box No. 63 Rio de Janeiro, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-machi, 3-chome, Higashi-ku, Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

For more data, circle A-22 on Reader Service Card



Ring Twisting or Uptwisting . . . WHITIN has the Twister for you!

To provide precisely the right twister for maximum production, highest quality twisting, on the largest practical package to secure knot-free yarns, Whitin manufactures 49 models of ring and uptwisters. Whitin can supply the type and model most suitable for any twisting need for natural and synthetic fibers.

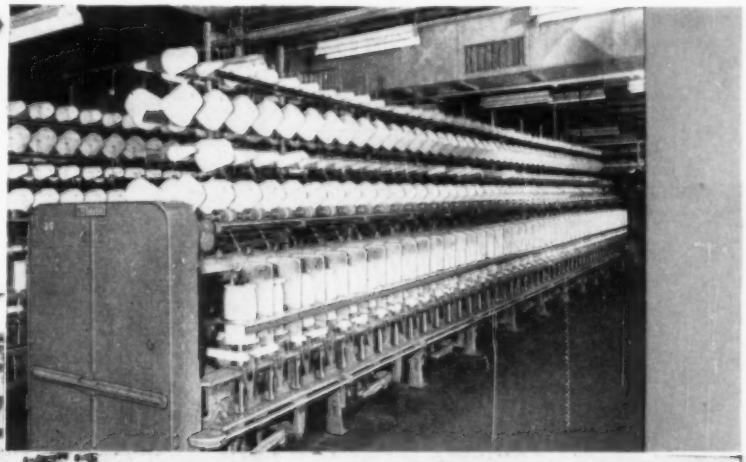
The machines illustrated here are widely used by leading mills in the production of coarse yarns for carpets and tufted rugs; they have also made outstanding records in the tire cord and paper yarn industries. All Whitin Twisters and accessory machines are advanced in design, rigid in construction and precision built.

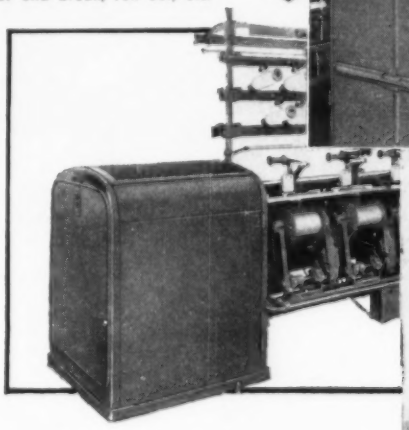
COMMODORE* RING TWISTER

For wet or dry twisting, the Commodore is available in gauges from 7" - 10", with rings ranging from 5½" - 8½" and, normally, with 92 or more spindles. Package weights are from 7.0 - 11.0 lbs. of knot-free plied yarn.

SPOOLMATIC* REDRAW DOUBLER with Electronic Slub Detectors

For winding one, two or more ends at 100 - 300 yds./min., package up to 9.0 lbs. This machine provides new scope for tufted rug or carpet yarns. Exclusive electronic slub detectors stop each winding position for end break, run out, etc.





CABLE-KING* UPTWISTER

Produces several types of take-up packages: headless, parallel-wound on paper tube; straight spool wind on double head bobbin; or cone wound on paper tube. Packages up to 9.0 lbs. and speeds up to 5250 RPM. Ideal for cabling nylon tire cord and other heavy industrial yarns.

Whitin CABLE-KING UPTWISTER is available in lengths of 60 - 120 spindles, 11" gauge.

*Trade mark

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

For more data, circle A-23 on Reader Service Card

Munsingwear, Inc. simplifies pricing . . .

Pre-printed tape price tabs make price marking easy!

How do you handle retail price changes when the price is already printed on clear plastic packaging envelopes that you buy by the thousands? Munsingwear, Inc., Minneapolis, does it with printed transparent "SCOTCH" Brand Cellophane Tape—instead of printing the envelopes. The tape goes on in an instant, sticks tight, gives a "printed price" look to everything from Munsingwear's boxer shorts to "T" shirts.

This printable "SCOTCH" Brand tape is only one of the many "SCOTCH" Brand tapes designed for the textile and apparel industries. Together, this family of tapes makes up the world's most complete line of pressure-sensitive tapes for textile mill use. That's why you get the *right* tape for your need when you specify "SCOTCH" Brand.

Our sales engineers will be glad to show how the right combination of tape and tape-dispensing equipment can help you save money, too. Write 3M, Dept. PZ-128, St. Paul 6, Minnesota, for free manual.

When tape costs so little, why take less than . . .

REG. U. S. PAT. OFF.

SCOTCH BRAND

Tapes for the textile and apparel industries

"SCOTCH" is a registered trademark for the pressure-sensitive adhesive tapes of 3M Co., St. Paul 6, Minn. Export: 99 Park Ave., New York 16. Canada: London, Ontario.

MINNESOTA MINING AND MANUFACTURING COMPANY

...WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

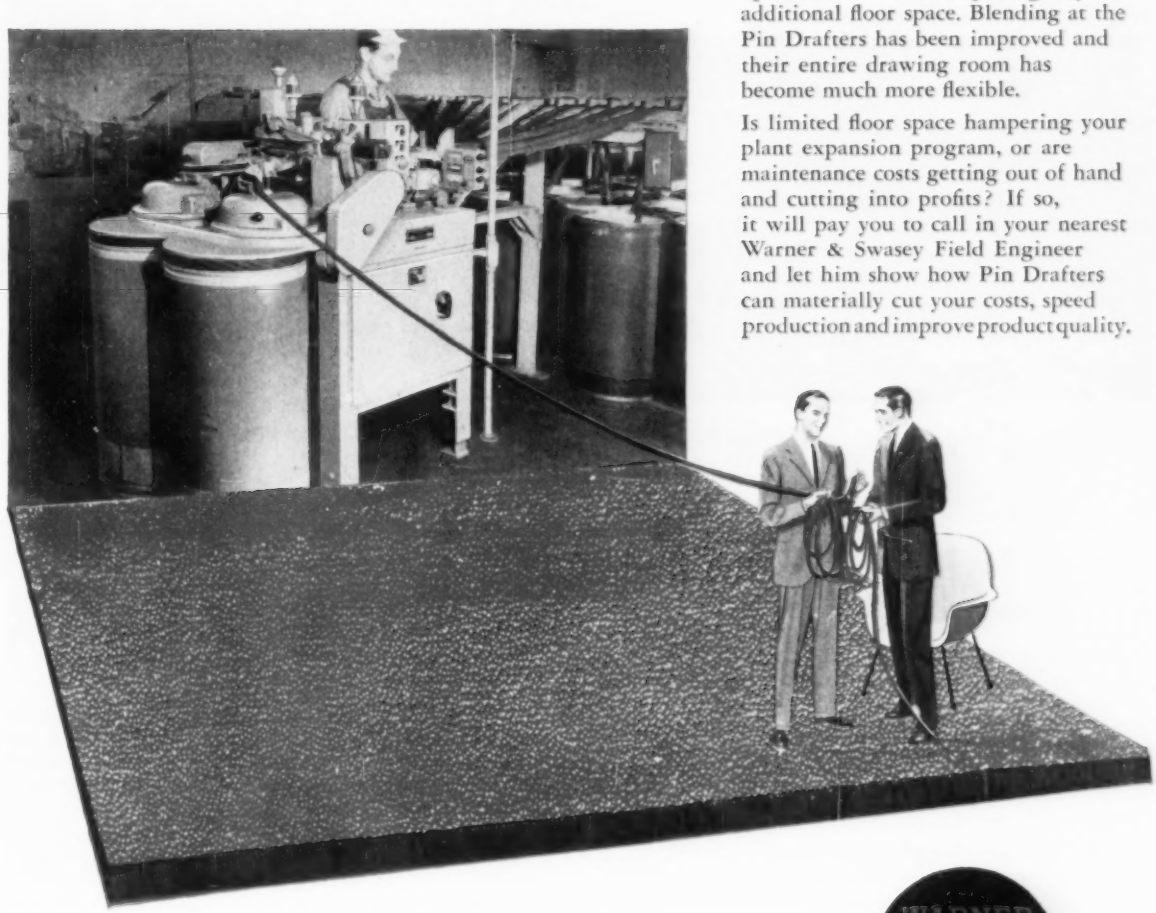
Warner & Swasey Pin Drafters® help roll out the red carpet for Crown Cotton Mills

● Four years ago, Crown Cotton Mills of Dalton, Georgia, began the gradual installation of a modified worsted system. Today, it processes over 65,000 pounds of tufted carpet yarns each week.

At the start of their tufted yarn operation, only one dual delivery Pin Drafter was used. As demand for the yarn improved, additional Pin Drafter Intersecting Draw Frames were installed.

Crown's latest acquisition—two single head, high-speed dual delivery and one dual head, high-speed quad delivery units—is increasing production and providing a more balanced operation—without requiring any additional floor space. Blending at the Pin Drafters has been improved and their entire drawing room has become much more flexible.

Is limited floor space hampering your plant expansion program, or are maintenance costs getting out of hand and cutting into profits? If so, it will pay you to call in your nearest Warner & Swasey Field Engineer and let him show how Pin Drafters can materially cut your costs, speed production and improve product quality.



SALES OFFICES: Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
20 Chestnut Street, P.O. Box 215, Needham 92, Mass. • 121 11th Street, N.E., Atlanta 3, Ga.
Suburban Square Building, Ardmore (Philadelphia), Pa. • 624 Pecan Avenue, Charlotte 5, N.C.

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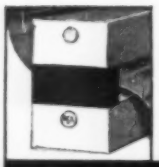
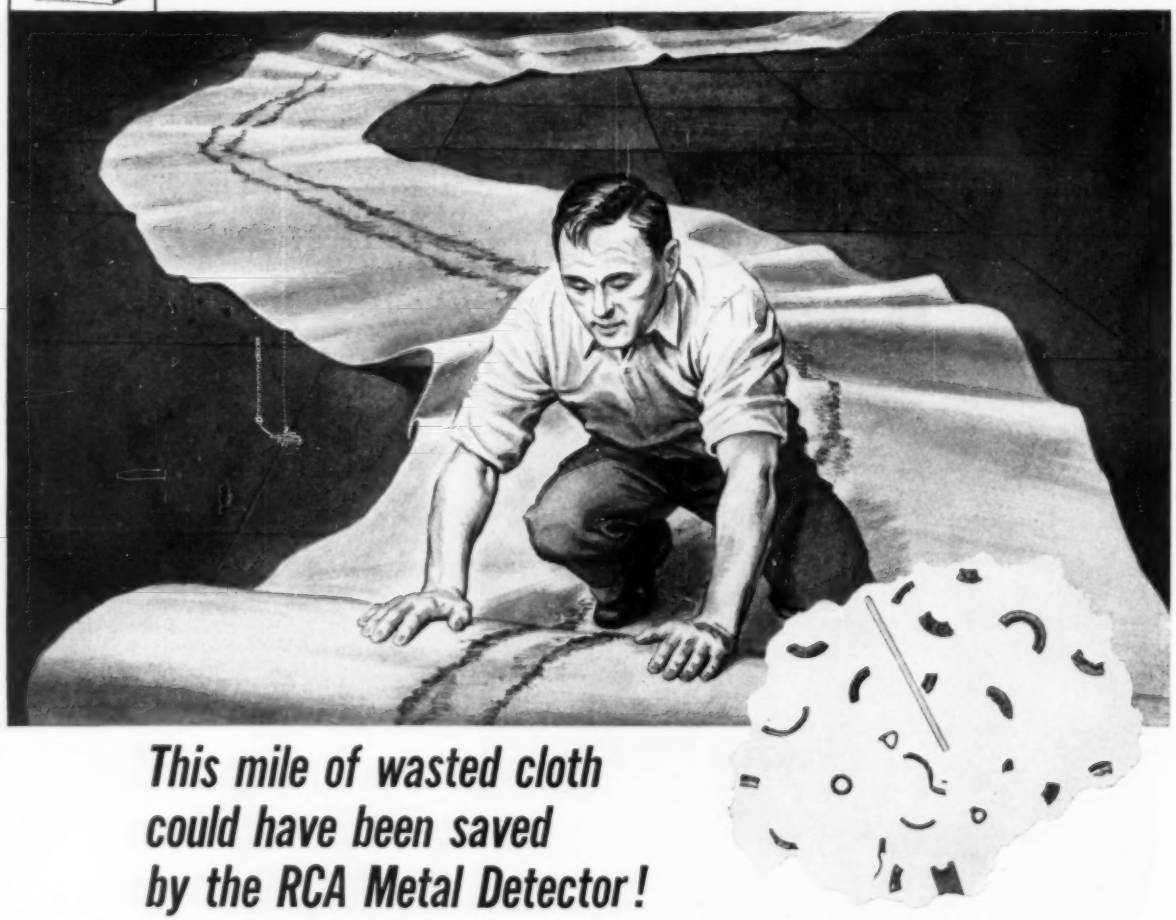
YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY



...GATEWAY TO SAFETY FROM TRAMP METAL



This mile of wasted cloth could have been saved by the RCA Metal Detector!

A mill recently suffered the loss of nearly a mile of valuable cloth in one run because a sharp fragment of embedded metal had gone undetected by human eyes! The loss was staggering—and could have been prevented. With RCA Electronic Metal Detectors on the job, both magnetic and non-magnetic metals are intercepted with equal ease. Metal to be detected can be smaller than a pinhead (1mm diameter)—so sensitive is this device especially developed for textile mills.

The RCA Electronic Metal Detector can find metal hidden in non-magnetic material traveling at speeds from 15 to 1000 feet per minute. As soon as the offending metal fragment or part rides through the Metal Detector's aperture, a warning device is triggered and the traveling material is stopped.

The RCA Electronic Metal Detector is practically foolproof, has no moving parts, requires no attendant to control it, and costs much less than you might suppose. Installed under the supervision of a trained RCA technician.

FREE literature on the RCA Electronic Metal Detector for textiles will be sent to you without obligation. Write to RCA Dept. N-140, Building 15-1, Camden, N. J.

Tmk(s) ®

RADIO CORPORATION of AMERICA

CAMDEN, N. J.

In Canada: RCA VICTOR Company Limited, Montreal

RCA ELECTRONIC METAL DETECTOR

For more data, circle A-26 on Reader Service Card

Ideal Modernized Drawing

- First in High Speed
- First in Quality
- First in Economy
- First in Versatility

Compare 1948 drawing with today's. The changes have been revolutionary. With few exceptions *every improvement in drawing frames has been pioneered by Ideal.* Today's new Ideal Frames are way out in front in production, in sliver quality, and in operating economy.

- **First in High Speed** Ten years ago 110 feet per minute was a satisfactory speed. Ideal's revolutionary construction stepped this up to 200 feet . . . then 250 . . . 300 . . . 350 . . . and now Ideal Drawing is producing sliver of unsurpassed quality at over 400 feet *in normal consistent operation.* This means 366% of 1948 production, due to Ideal's engineering leadership.
- **First in Quality** Ideal patent ball bearing spacer sections* eliminate cutting and bruising of fibers and automatically even out thick and thin places in the sliver. Ideal's exclusive flute construction imparts a permanent strength-increasing crimp to the fibers. Ball bearing construction eliminates oil spots. Ideal's Vacuum System** keeps the fiber cleaner. And Ideal's ability to produce stretch-out blends has greatly improved the quality of blended yarns.
- **First in Economy** Ideal Drawing Frames require fewer adjustments, less maintenance, less power and fewer replacements. High production and extremely compact construction saves floor space. Per pound of sliver, the New Ideal Drawing Frame is your most economical drawing.
- **First in Versatility** Ideal Drawing was the first to draw coarse counts, fine counts, synthetics, and blends with equal efficiency.

We confidently believe that the New Ideal Drawing Frame is the finest on the market. Let us discuss it and demonstrate it to you before you buy *any* new drawing.

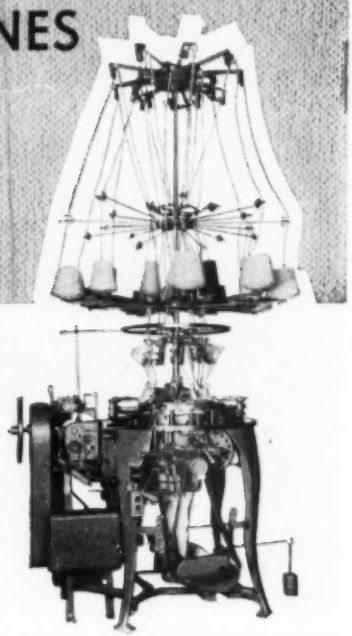
*Patented **Pat. Pending

Ideal Industries, Inc.
Bessemer City, N. C.

LEIGHTON TRANSFER MACHINES

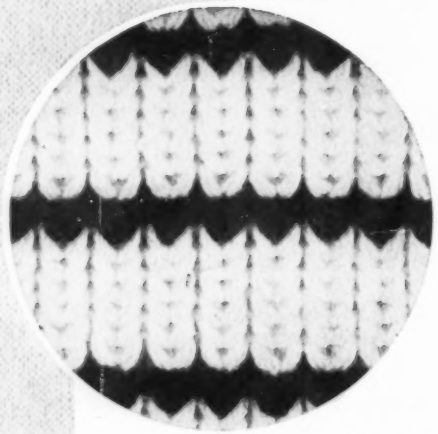
give you High Production . . .

Even on *Ban-lon!*



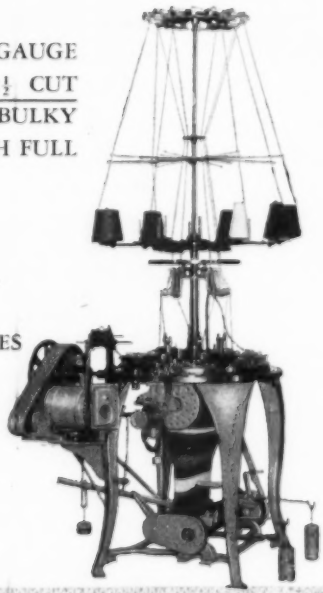
LEIGHTON TRANSFER MACHINES ARE ESPECIALLY ENGINEERED TO HANDLE NEW SYNTHETIC YARNS AS BAN-LON AND ORLON. FIELD TESTS IN MILLS HAVE PROVEN LEIGHTON MACHINES TO HANDLE THESE NEW MATERIALS ON A SATISFACTORY PRODUCTION BASIS USING 14 CUT TRANSFER MACHINES.

. . . OR LEIGHTON'S BULKY KNITTER

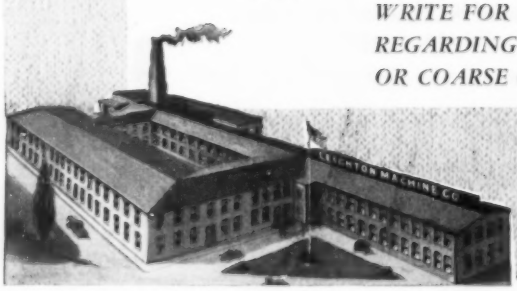


LEIGHTON'S COARSE GAUGE RACKING MACHINES 2½ CUT — GIVE YOU TRUE BULKY STITCH SWEATERS WITH FULL STITCHES

THESE MACHINES ARE AVAILABLE IN 2½—3—4—5 CUT AND KNIT UP TO 3 COLOR STRIPES



WRITE FOR FURTHER INFORMATION REGARDING LEIGHTON'S TRANSFER OR COARSE GAUGE MACHINES.



LEIGHTON MACHINE COMPANY

MANCHESTER, NEW HAMPSHIRE

MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES

SUPERVISION—
what makes it tick?

There is an old saying in the textile industry that a supervisor spends about 80% of his time worrying about people and 20% worrying about production.

That's a fallacy, of course, because you can't separate people from production. Without one, you wouldn't have the other; and one is absolutely dependent on the other.

However, the saying does emphasize one of the cardinal rules for successful mill operation. Good management and leadership of people is as necessary to successful mill operation as good machinery and good marketing of the mill's products.

It is true also that in the area where staff or work force is involved, no matter how many or how few people are concerned, you pretty much have to fly by the seat of your pants. People do not respond to slide-rule management the way machines, fiber, and chemicals do. Very often, white is not quite white and black is not quite black. Supervisors of experience know that they deal with a combination of feelings and thought and that the combination can change at the drop of a hat.

It is this uncertainty, plus the fact that production is impossible without people, that causes management of people to loom so large in the minds of supervisors.

Problems To Grow More Acute

As fewer people are needed to run a mill, the problems of managing people are likely to grow worse instead of better.

The other day a visitor to our office was talking about a weave room in the South where one weaver runs 132 looms. Not so many years ago, there would have been four to six weavers, plus a batteryhand and filling hauler, engaged on these looms.

The same kind of shrinking work force is now prevalent in almost every other mill department.

It's true that experts say that human-relations problems multiply as more people are added. However, it is also true that individual problems take on added importance as the group grows smaller because group identification is a powerful factor in work motivation.

Equally important is the fact that worker pride declines as the job becomes more mechanical and more controlled; that is, as production becomes less dependent on human effort.

So almost daily the job of the supervisor is requiring more-delicate skills and demanding more-rigorous standards of the man who fills the job.

The alert supervisor will therefore constantly study himself and his techniques and strive always to improve them in the light of new human-relations knowledge and the changing individual and social needs of the people he supervises.

New and Old Knowledge

On p. 47 of this issue, we bring up to date two of the vitally important aspects of supervision: action on the individual level and action on the group level. Some of the points in these articles are relatively new human-relations knowledge; some are old knowledge. In both cases, the knowledge can be important pointers for supervisor self-improvement.

One thing not specifically brought out in the articles is the fact that the supervisor's own family is the beginning of all human relations and the beginning of all supervision.

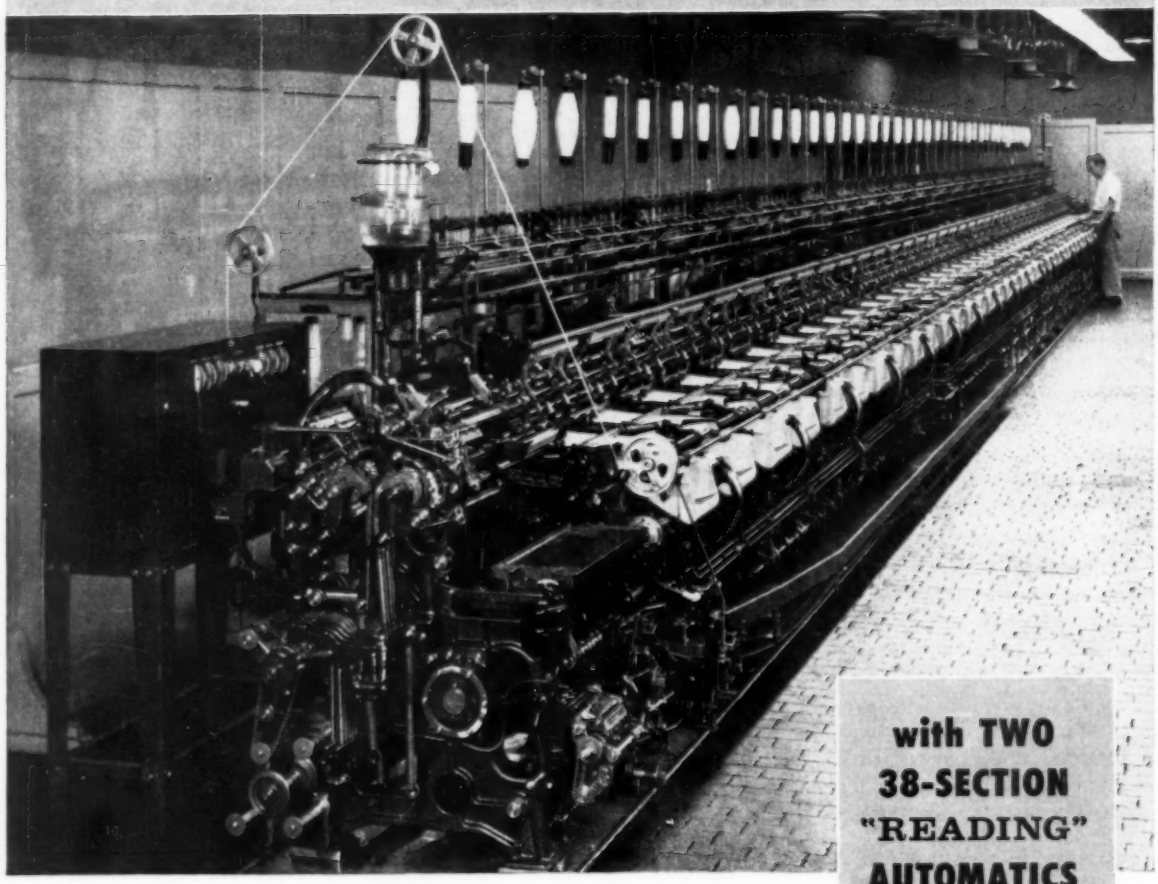
Just as the genius of the Greeks was in science and philosophy and of the Hebrews in religion, so the genius of the ancient Chinese was in human relations. And the cornerstone of the Chinese approach to the problem of all human relations was that the family is society in embryo. It formed a small circle, with all the elements of society, where moral practices were created and where order, work, and attainment depended on the character of the head of the home.

To a very large degree, supervising, leading, or managing people at work is only a repetition of the same activity in the supervisor's own home. Trouble or success in one may indicate trouble or success in the other.

For a free reprint, circle "X-1 Supervision" on Reader-Service Card

O. M. Thomas

Now 47.6 DOZEN PAIRS per 8-HOUR SHIFT* ...1 OPERATOR



with TWO 38-SECTION "READING" AUTOMATICS

Figure the arithmetic of the new "READING" Automatics. See how you get continuous, uninterrupted production of fine quality stockings—with one operator for two machines. Choice of 30-section or 38-section, with many new and improved features. And remember: manufacturers working with "READING" Machines value "READING" service as second only in importance to the machine itself.

Knitting Machine Division
TEXTILE MACHINE WORKS, READING, PENNA.
Reconditioning Plant at Asheboro, N.C.
Builders of Textile Machinery Since 1900

*
Stocking styles: Size 10, 60-gauge, 15 denier. 2406 courses (including idle courses) with 62 narrowings in the main, and 120 narrowings in the splicing, heel, foot and toe. Design placed in afterwelt.

The "READING"
Full-Fashioned Knitting Machine

For more data, circle A-29 on Reader Service Card

In financial aid to education . . .

What Should Business Do Now?

Now that the federal government is entering the field, should business firms stop giving financial aid to our colleges and universities?

This question is now being discussed by business directors throughout the country. The discussion is prompted by the near-billion-dollar program of federal aid to education passed by Congress a few months ago. For if the federal government, with its access to billions in taxes, is assuming responsibility for the financial welfare of education, should not business get out of the way and let the government take over? This is the general way the question is being asked.

The answer is a resounding NO.

What The Federal Program Does

The new federal program makes it possible for the government to spend the imposing total of $900 million for aid to education over the next four years. There are still many loose ends in the program. But already it's quite clear what such funds will — and will not — do to help relieve the financial plight of our colleges and universities.

First of all, the program is not going to solve any financial problems in education overnight. The program is just barely underway. So far no money has actually been allocated, and Congress has appropriated only $40 million — less than 5% of the total.

More important, there is very little in the total program which will result in direct aid to colleges and universities. The program does set up fellowships to train college teachers. But most of the aid will eventually be channeled through the states to primary and secondary schools. The main focus of the program is education for national defense — strengthening science, mathematics and foreign languages in elementary and secondary schools, together with grants for counseling, testing and research.

The one big item for higher education is a $295 million student loan program, which will help needy students pay tuition and other fees. But tuition rarely covers the full cost to the college of educating a student. So the net result could well be an additional financial strain on our institutions of higher learning.

For the three most pressing financial needs — faculty salaries, scholarship grants and new plant and equipment—colleges and universities must still rely heavily on help from the business community. And it would indeed be a major

misfortune if the recent actions of the government put a blight on this growing and substantial support to higher education.

In the last ten years, business has expanded its financial aid to education by more than four fold. In 1948, contributions were only $24 million. In 1957, such aid reached an estimated $125 million. Moreover, corporations have been putting a larger proportion of their total charitable gifts into education. In 1950, the percentage was only 17%. By pre-Sputnik 1956, the share had already increased to 34%, according to figures recently released by the Council for Financial Aid to Education.

Why Business Must Help

The most compelling reason for increasing business aid to higher education — at an even faster rate—is that our colleges and universities desperately need financial help. It is that simple. Private contributions to higher education must average at least $400 million over the next ten years if our colleges are to meet rising operating costs and raise faculty salaries to decent levels. Despite the growth in business contributions, we are still well below that goal.

If our colleges cannot solve their mounting financial difficulties through voluntary help from business firms, alumni and communities — then it is to be expected that federal aid ultimately will be mobilized in a big way. In principle, if not in dollars, the 85th Congress has paved the way. Indeed, a large federal scholarship program was squeezed out of this year's legislation only in the course of last-minute compromises. And Arthur S. Flemming, Secretary of Health, Education and Welfare, has urged that the next session of Congress restore the scholarship program.

About any federal rescue operation for higher education, two things are quite clear:

(1) **Such aid will come too late to prevent irreparable harm resulting from the current shortage of funds.** The need for help is urgent and immediate.

(2) **With federal taxes taking over half of all corporate income, any federal program in the end will be financed in large part by the business community.**

An Opportunity

So, viewed narrowly, it is in the selfish interest of business firms to aid our colleges and universities now, rather than wait and be forced to pay later on. By doing so, they ensure that business will have a continuing supply of well-trained graduates. They take advantage of the tax laws for charitable contributions which mean the government in effect assumes more than half the cost of business aid to education. And they win gratitude for a voluntary and generous act.

Viewed in the broad public interest, the business community has an opportunity to perform a financial rescue mission in education which could well be the key to successful survival, not only of our present system of higher education, but also of the nation itself.

As previous editorials in this series have pointed out, a very small share of the net income of business firms — about 1% — would do the job. Certainly business must not be distracted from this opportunity by the new venture of the federal government in financial aid to education.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nation-wide developments. Permission is freely extended to newspapers, groups or individuals to quote or reprint all or parts of the text.

Donald C McGraw

PRESIDENT

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Textile World

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SUPERVISORS —and the job ahead

A NEW COST BUILDUP IS NOW UNDER WAY IN MILLS. For the next few years, supervisors will be under strong pressure because of two things:

• Demand for production will be high.

Last April, the textile industry hit the bottom of the 1954-58 business cycle and started up again. Since then, mill production has gone up about 15%. For the first time in five years, production has gone beyond the high point reached in the previous minor (two-year) textile cycle.

With teen-age and early-twenties age groups now accounting for an increased proportion of U. S. population, observers see little letup in the demand for apparel textiles, which account for about half of mill production, in this new business cycle.

• But production will be hampered by mills tearing down old machinery and installing new.

In the last six or eight years, the rate of mill improvement has not kept up with the rates in most other U. S. industries, and most analysts now think the textile industry "is due." They expect the greatest round of modernization and expansion the industry has had since the early 1950's.

In these conditions of high demand for production and production loss through machinery installation, costs always creep up. Supervisors often become lax, sometimes negligent.

This Business Cycle

For an alert supervisor, the next few years offer a period of high activity and varied responsibility in which he can vastly broaden his experience and improve his skills.

A supervisor is concerned with handling workers at two levels: the individual and the group. There are many platitudinous rules and many formularized gimmicks for a supervisor to try to use in accomplishing his one task: get people, the individual and the group, to work profitably.

But all experienced supervisors know that rules and formulas are good only until a problem arises. Then human foibles take over, and rules and formulas go out the window.

But one thing never fails to pay off for a supervisor; that is an understanding of the individual and how he or she will react as part of the group.

To get the latest knowledge available on this subject that can be most useful to supervisors in this new cycle of high activity and strong pressures, TEXTILE WORLD went to two experts in the textile industry. On the following pages, we publish their reports.

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The INDIVIDUAL—
the basis of supervision

- Are you capable of understanding another individual?
- Can you predict how he or she will respond in different situations?
- Exactly what is "putting yourself in the other fellow's shoes"?

By **WENDELL M. PATTON, JR.,** Assistant General Manager, Shuford Mills

An entirely new frontier in human understanding is being uncovered in psychological experimentation. For the first time, psychologists are able to measure one's ability to understand others.

Results so far are astonishing. They toss into discard many of the pet theories supervisors and human-relations experts have set such store by.

Two basic facts have emerged:

1. The ability to understand others exists in widely varying degrees in every group that has been tested. The range is often from a complete lack of the ability to understand people to an almost uncanny ability.

2. An individual's ability to understand others changes from time to time and from situation to situation.

In a very real sense, this ability is a quite mysterious trait.

What Is It?

The name given this peculiar ability is "empathy." Several psychologists have defined it, with definitions such as:

". . . a direct apprehension of the state of mind of another person . . ." (Dr. Gardner Murphy).

". . . the ability of individuals or groups to predict . . . the responses of others . . ." (Dr. H. H. Remmers)

But regardless of the exact definition, all agree that empathy generally represents the ability "to put yourself in the other fellow's shoes."

Of course, that sounds familiar.

But empathy is being used in a sense that involves more than "doing unto others as you would have them do unto you."

For example, a supervisor–with his background, position, the present situation, and opinion of the other individual involved–will want to be treated in a given way that in a sense is the net total of all the personal factors involved. The other individual has a different set of factors, each of which bears a different weight. Most important, the opinion he has of the supervisor may be vastly different from what the supervisor thinks of him. His net total will be quite different from the supervisor's.

Empathy, then, is the ability to predict things about other people constantly and quickly and to base action on those predictions.

The process can be called judgment as well as prediction. Whatever it is called, it means sensing the state of mind of the other fellow and knowing what his reaction is likely to be.

Some Have It

Some individuals seem consistently accurate in their predictions. Consequently, they can consistently adopt correct, and successful, behavior for themselves. Others seem often, even consistently, unable to make such predictions. As supervisors, they are often in hot water.

Interestingly enough, studies so far indicate that success, mediocre success, or failure in accurate predictions occur without relation to educational level, intellectual functioning, or type of personality.

The studies also indicate that everyone possessing the ability can use it much more easily with some people than with others. This suggests that the old axiom that you cannot understand a person very different from yourself is scientifically true.

But it also suggests that the failure lies as much in yourself as in the other person and that everyone has severe limitations in his human understanding.

There is one big reason why a person fails to understand someone quite different from himself. He tends to believe that others think, act, feel, and have the same attitudes and motivations that he has himself. Psychologists call this trait "projection"–projecting one's own feelings, thoughts, etc. to others.

Failure to understand others, therefore, is simply projecting yourself to the other person and missing the cues that could lead to accurate prediction of the other's behavior.

Can It Be Taught?

Psychologists are not certain yet whether the ability to "empathize" with others can be taught. If it can be taught to any degree, the effectiveness of teaching is still very uncertain.

In many ways, this ability is much like other outstanding abilities, or perhaps "gifts," or talents. For example, the techniques of art or drama can be taught; but talent, far more than teaching, forges the great successes.

Certainly it would seem that being aware of the importance of empathy and severe practice in trying to understand others and predict their reactions will gradually improve whatever ability you had to start with.

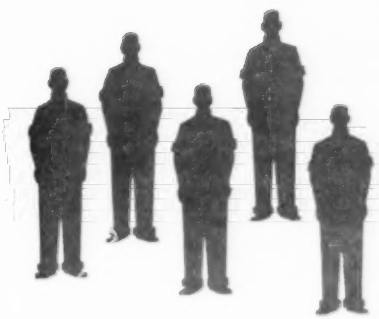
Sample Test

Quick, easy tests to indicate the degree of empathy between two persons, or between two groups, have been devised by psychologists. They are based on having each of two people or two groups answer a few Yes or No questions, first answering for himself or the group and then answering the same questions for the other person or group.

The results show (1) how the individual regards himself and (2) how he regards the other person. The degree of agreement of the four sets of answers indicates the degree of understanding.

For the following sample, the supervisor would answer each question Yes or No about himself and then about a particular employee. Then the employee would answer each question about himself and about the supervisor.

1. Are you easily distracted?
2. Does it disturb you to be criticized?
3. Are you calm in time of panic?
4. Do you worry about humiliating experiences?
5. Do you make up your mind easily?
6. Do you often feel contempt for others?
7. Have you many insincere friends?
8. Do you resent taking orders?
9. Do you like responsibility?
10. Do you feel important?
11. Are you generally optimistic?
12. Are you suspicious of people who are real nice for no apparent reason?
13. Do you compare yourself to others?
14. Do you lie now and then if necessary?
15. Are you a cautious person?



The GROUP— *leadership and productivity*

- What motivates worker groups to produce well?
- What kind of supervision do groups respond to best?
- Can supervisor training be effective?

By **JAMES E. GARDNER,** Assistant Director of Personnel Research, Fieldcrest Mills

The supervisor is still the key man in production.

There has never been any serious doubt that a supervisor influences the output of his employees; but the refinements in incentive plans and industrial engineering, improvements in working conditions, and the emphasis on fringe benefits, while meritorious in themselves, have led us perhaps to minimize this influence.

These other factors may motivate employees to produce, although there is more faith than proof in many instances. Of the effect on output of supervisory actions and of the relationship between supervisor and employees, there is an increasing amount of evidence.

The evidence points more and more to the presence of the supervisor's influence as of primary importance and has shown us the kinds of supervisory actions that bring about (or are at least associated with) high production among employees.

This last point is vital. If high production accompanies certain supervisory actions or characteristics that are trainable, then supervisors can learn to improve production through training in these actions.

The Hawthorne Experiments

The effect of supervision upon production was perhaps the major lesson to be learned from the famous experiments conducted in the 1930's with six relay assemblers in the Hawthorne plant of the Western Electric Co. These employees were subjected to a number of changes in conditions of work; there were 21 experimental periods in the prolonged investigation that lasted more than two years.

No significant drop in production occurred no matter what change was introduced in the work situation. Output continued to increase or remained at relatively the same level. This was true even when the change was a return to a previous condition (as rest periods, then no rest periods; changed positions for operators, return to original positions; etc.).

The investigators concluded that the consistent increase in production was not due to changes in working conditions but rather to a change in employee attitude that had occurred in the new supervisory climate.

Supervision over the assemblers, originally a joint function of foreman and investigator, had gradually passed to the investigator. He consulted with the girls prior to changes in experimental conditions, asked their opinions concerning the changes, and generally provided a loose type of supervision aimed at securing the girls' cooperation in the experiment.

The basic experiment provided valuable clues as to the type of supervisory action that, in the normal relationship, might elicit increased effort and output from employees.

The Mayo Experiment

Elton Mayo found, in a southern California plant, a small department whose output was reported by the foreman to be 25% above the plant average and whose absentee record was outstanding.

Mayo gives this account, in part, of the supervisory activities of "the leading man" in the department:

"He begins by listening to a new employee, introduces him to his new companions, and tries to get him congenial work associates. After the newcomer has worked for several days, the leadman gets him a pass and takes him down to the assembly line to see what he has made installed in the complete machine. In addition to this, he listens to any personal problems that may be preoccupying a worker, new or old. . . . In these days, the foreman says, people have 'many more things on their minds' than they used to have; and 'strong-arm' methods don't work.'"

PLEASE TURN THE PAGE

The Bavelas Experiment

In research conducted by A. Bavelas, group decision by the workers on production goals brought a significant increase in output. The workers decided on production goals in three weekly meetings with the psychologist in the plant.

Sixty units per hour was standard for the operation, which had been set up by time-and-motion analysis and on which piece rates were used. Seventy-five was considered to be the ceiling, and the operators had been at about this level for several weeks prior to the experiment.

The first goal set was 84; it was attained. The second goal was 95; this goal was not reached, although the production level remained high. The third goal was 90. Production stabilized at about 87.

There was still a question to be resolved. Was the increase due to the group decision or to some other aspect of the group meetings?

The psychologist met with two other work teams and gave them the same attention as the first, but no production goal was decided on by the employees. Output from these two groups remained at virtually the same level as before. The conclusion was inescapable; group decision was the factor associated with increased production.

The Harwood Experiment

In a departmental change-over involving new work methods and rates and simplification of product, the Harwood Mfg. Corp., a garment-manufacturing concern, decided to try three approaches to the introduction of the change to employees. A different method was used with each of three groups.

1. The first group was simply told, in a group meeting, what the changes were, why they were necessary, and the new method of work and piece rate.

2. The second group, again in a group meeting, was given a complete explanation of the economic necessity for the change; but its members were asked to choose representatives to meet with management for discussion and decision concerning new job methods. Members were to give their ideas to their representatives. The representatives met with management, and then a second meeting of the whole group was held for discussion and approval of the new job methods and rates.

3. The third group participated as a whole, all of its members sitting with management to offer suggestions and to agree on the new method and rate.

In the first group, production dropped for a sustained period, 9% of the operators quit within two weeks, and grievances were filed against the rate. The group was disbanded and its members placed on other jobs.

The second group was back to standard rate in 14 days and exceeded its previous production (before change-over) within a month. No one quit.

The third group won the race. It regained its former level of production by the second day and climbed steadily to a level 14% higher than before. No one quit.

As a postscript to the experiment, the employees from the first group were reassembled and assigned to a new job opening in the plant; but this time management used the same approach with them as it had used so successfully with the third group earlier. This approach of direct participation of the whole group worked again. Results: good production, no quits, cooperation, high morale.

Limitations of the Experiments

In three of the cited studies—the Hawthorne experiment, Bavelas's study, and the Harwood experiment—the obtained results must be ascribed to activities of people other than the supervisor himself. The investigator, the psychologist, and members of higher management entered the scene. The situations were therefore not part of the regular day-to-day interaction of supervisor and worker.

Consequently, one is reluctant to apply the findings without qualification to the foreman's daily struggle for departmental efficiency.

It remained for the University of Michigan's Survey Research Center to come to grips with the problem in a completely realistic setting involving supervisors and employees in their usual roles and engaged in their usual work.

This research organization studied, by observation and data-collecting rather than by experimental manipulation, work groups of various kinds, both blue collar and white collar, with the objective of discovering "the underlying principles applicable to the problems of organizing and managing human activities."

The Michigan Findings

The findings are broad, but certain of them bear directly on the question of supervisory effect on production. Through comparisons of supervisors of high-producing groups with supervisors of low-producing groups, a definite pattern of effective supervisory activities or characteristics emerged. The supervisors whose work group produced at a high level were found to be, as described by Rensis Likert's report of 1951, this sort of fellow:

1. He did not supervise his workers as closely as the supervisors of the low-production group.

2. He gave more attention to motivating his employees, was more employee-oriented, saw his job as one of personal leadership, and saw himself as a representative of his employees.

3. He was seen by his men as less punitive. When things went wrong, he explained how he wanted them done rather than bawling out the employees.

4. He took more personal interest in the problems of his employees.

5. He trained his people for better jobs.

6. His group had greater pride in its work, better team spirit, and better standards for its own performance.

7. He spent more time in planning and less time in production tasks.

The pattern of supervisory practices in the high-producing groups is summarized by Likert as one that "emphasizes motivation, downward orientation, participation, and open channels of communication. . . ."

Caution Is Necessary

A shallow look at these findings might suggest the absurd conclusion that a foreman can increase production by ignoring production and immersing himself in "employee-centered" activities. High production might seem merely a by-product.

Likert makes the clarifying point that being employee-centered and having a concern for production need not be opposed characteristics or mutually exclusive. They can be compatible; the successful foreman has both. He emphasizes production but at the same time "is interested in his men and sensitive to human-relations problems."

In all of this discussion, nothing has yet been said about the supervisor's technical know-how as a factor in production. This topic has not been fully explored, although tradition gives weight to the argument that technical competence is vital.

There seems to be evidence from the Survey Research Center studies that the contribution of technical know-

how is somewhat dependent on the amount of standardization in jobs. Where there is much standardization, the contribution is smaller than when the jobs are not so standardized.

The finding that employees produce more under general supervision than under close supervision is supported by the 1953 report by Nancy Morse, also of the Survey Research Center, entitled "Satisfactions in the White Collar Job."

The Good Supervisor

Among the hypotheses suggested to Morse by her findings is that the condition for high employee satisfaction and high group productivity are created where the supervisor "generally is a warm person who treats his workers as human beings rather than producers alone, delegating to his staff varied work, giving considerable freedom of conduct, and putting little pressure on his employees . . ."

She presents this statement as a hypothesis rather than a firm conclusion, and yet it ties up with several of the threads running through virtually all the studies in the memorable series described here.

The successful foreman, as seen in many situations, is considerate of employees and their needs, is interested in them and their problems, listens to them and informs them, grants them freedom from strict surveillance, motivates them rather than drives them.

He also permits their participation in certain matters of concern to them through genuine consultation (rather than maneuvering them to his pre-established position under the fiction that it was their own idea). He encourages group participation and the development of team spirit, recognizing that he stands in a relationship not only with his individual employees but also with his employees as a group or team.

Production Can Be Emphasized

If all of this cloys the practical mill man as a super abundance of sweetness and light, we hasten to add that it apparently can be combined with a strong emphasis on production.

Those who are still not convinced may be consoled by the news that it still may not work in certain situations. It is not a formula that guarantees unvarying success regardless of the specific operation and situation to which it is applied. And it may be a two-edged sword that hurts as well as helps.

Morse found, for example, that in one clerical section, where more of the jobs were routine than in other sections under study, close supervision brought higher production than general supervision.

Again, she found that general supervision tends to raise the employees' level of aspiration for skilled, varied work and pay and job status. If the supervisor has little influence in matters of pay and promotion, and therefore cannot satisfy these strengthened needs, the employees will be dissatisfied.

Supervisor Training

There are difficulties, too, in the training of supervisors in the sort of activities that appear to have the best chance of motivating employees and increasing production.

The major difficulty was clearly illustrated by Fleishman's 1951 report on the effect of "leadership climate" on the behavior of supervisors.

He concluded, after a study of foremen's behavior in their departments after they had taken a leadership training course, that a foreman's behavior was more closely related to the kind of boss he had than to the training he had taken. Unless his boss acts in the way the foreman is taught, the foreman is not likely to put the training to use in his department. He will do things the way the boss does them or the way the thinks the boss wants them done.

Research Will Pay Off

The research findings are not destroyed by the accepted facts that the formula of effective supervisory behavior established by research is not foolproof or all-curing and that the training is difficult. Nor are the findings less useful for all of this.

We must proceed with caution and insight, both in our training and in the application of these findings to specific situations. There is justifiable argument as to where they are useful, where they are practical, where they are acceptable, etc.

But they point in a general direction; and as research findings continue to improve our vision, the way to high production through supervision may become clearer still.

Humanics — *A TW Brief*

The Time To Listen

When an employee comes to you with a problem, idea, or suggestion, your first reaction may be, "Surely here is something that can be held over for discussion when I'm not so busy." But actually a lot may be gained by the simple procedure of giving these situations priority over all others except emergencies. Too often a supervisor fails to understand what may be lost through a delay of even a day or two in listening to the worker.

1. Few men take the trouble to write an outline of the topic they want to discuss. They come to the foreman when they have the details firmly in mind. If they are put off for even a relatively short time, many minor points are lost and the idea or suggestion may be changed considerably.

2. Loss of enthusiasm may go even deeper than loss of detail. Let a worker talk when his desire to do so runs highest and his presentation will be more forceful, more interesting, and undoubtedly more effective.

3. Employees are liable to interpret a delay as a lack of interest. This type of discouragement not only reduces chances of the current idea being brought up again. Far worse, it may destroy a fine source of future suggestions by creating a "What's the use?" attitude.

4. Sometimes the worker may take a lack of immediate interest on the part of his supervisor as indicating he should go ahead and use his own judgment. Thus delays become risky in cases involving current action.

Naturally there will be some instances when an idea cannot be discussed fully on the spur of the moment. Then it becomes the foreman's responsibility to set a definite date in the near future, let the worker know he's interested, and follow up the matter on the date set.—GEORGE M. DODSON

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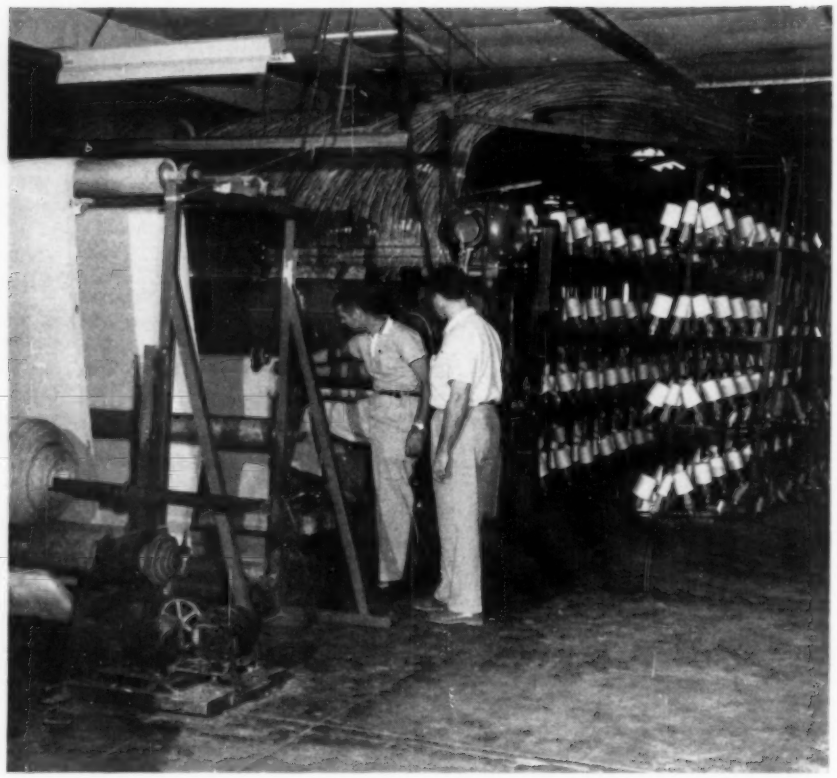


PRODUCTION of textured-nylon-6 carpets involves several new tufting methods developed at the mill. Croft's Nolan Helms, vice president, and J. T. Hash, fabric-development director, make plans to put more machines on textured nylon.

TEXTURED NYLON

Makes a Bid For Tufted-Carpet Sales

• With production methods already worked out, Croft Carpet Mills has moved into sales with a new tufted carpet—textured Caprolan. Tests show the carpets dye, finish, and wear well.

A NEW TUFTED CARPET made from textured nylon 6 recently was shown simultaneously in 15 strategic carpet markets across the country. Beginning with the National Home Furnishings Show in the New York Coliseum, this fast-striking sales pitch was made by Croft Carpet Mills, Inc., Fort Oglethorpe, Ga., to take advantage of its position as the first manufacturer making multiprocess filament-nylon broad carpets.

The yarn is made of bright high-tenacity Caprolan filament fibers textured by Leon-Ferenbach, Inc. A combination of two methods of texturing [TEXTILE WORLD, May, '58, p. 61] is used to make the yarn.

If this strong bid for a bigger slice of carpet sales is successful, Croft will be well paid for many months spent in developing methods to produce the carpets. To develop the textured-yarn carpets to the present sales position, Croft had to overcome several production problems not previously encountered in tufting.

Why Croft Moved in

Here's Croft's thinking back of its development as explained by Nolan D. Helms, vice president: "We're looking for a fiber to be used season after season with (1) adequate constant supply, (2) reasonably constant cost, and (3) great wearability.

"Initial tests and customer acceptance indicate that textured nylon may be that fiber. At present we're concentrating our sales efforts with 15 of our distributors in important sales areas. Customer acceptance in these areas will govern our future production on textured-nylon carpets."

Several Problems Were Licked

The most-important production problems Croft had to overcome were end breakage and fabric streaks from hanging fiber loops at tufting machines. To prevent these defects, Croft is changing its copper creel tubing to plastic tubing, which has an outside diameter of $\frac{3}{8}$ in.

Because nylon fibers are relatively tough when compared with fibers commonly used in tufting, Croft sharpens looper knives twice as often as on other fibers. To do this job, the mill master mechanic built a machine to automatically grind the knives with two angles.

Perhaps more important than any new method used at Croft in tufting the textured yarn is a wave attachment also developed at the mill and placed on tufting machines. A spiked rod is added to contact the jute backing near the needles. The rod pushes the backing back and forth under the needles so that the tufts are made in irregular rows.

Fibers Are Placed Evenly

This tufting method gives over-all fiber distribution to the carpet face to prevent open spaces. The result is a cut-pile carpet with an extremely smooth, even face.

During tufting, frequent inspection of fabrics is important. Croft also keeps all machines on textured nylon in tiptop mechanical condition.

Carpets are tufted 12 ft. wide in 100-yd. lengths and 15 ft. wide in 90-yd. lengths.

The textured fiber is creeled at tufting machines direct from packing cases in its relaxed form.

The yarn is 2,100 den., and 1,230 ends are creeled on straight needle-bar machines of $\frac{5}{32}$-in. gauge. Machine speed is normal for the 600-rpm. machines.

The carpets are tufted with the out pile $\frac{3}{4}$ in. long at tufting. In finishing, the pile drops to $\frac{5}{8}$ in. Face yarn is 36 oz. per sq. yd. on a 12-oz.-per-sq.-yd. jute backing.

How Carpets Are Finished

Advance Finishing Co., Dalton, Ga., dyes and finishes Croft's textured-nylon carpets before they are backed with latex.

A normal load for a dyebeck is a 90-ft. length of the 12- or 15-ft. material. The carpet is scoured before dyeing for 20 mins. at 160° F. in neutral soap or a nonionic detergent, and the bath is dropped.

A fresh dyebath is made up with a small amount of Igepon, and the well-dispersed dyestuff is added manually.

Advance uses disperse-type dyes entirely for Croft's present range of 11 shades. The dyeing is started in a cold bath and brought up to a boil in 1 hr. The bath is held at this temperature for 30 mins., and a sample is taken.

If the shade matches, the bath is cooled slowly to 100° F. and the goods are taken out without further processing.

If color has to be added, the dyebath is cooled down to 100° F. and the color addition is made. The nylon 6 picks up dye more readily than nylon 6,6; and experience has shown that to get level dyeing, color adds must be made to a practically cold bath.

Drying Temperatures Control Hand

Advance extracts the dyed carpets over a vacuum extractor and puts them through a single-pass flat dryer. The goods are supported on a series of rolls in this dryer.

Advance has found that the final hand of the carpet can be varied from soft to firm according to the maximum temperature at which the dryer is operated. By manipulating temperatures, the finished product is delivered with the hand wanted for any particular style.

After drying, the carpets are backed with a latex compound on a roller-coating and drying range at the Croft plant.

The backing is applied at a rate of 22 to 24 oz. per sq. yd.; and at the same time a light, paper-yarn scrim is run onto the back and becomes attached to it as the latex cures in the drying operation. The finished product is then carefully inspected and rolled up for shipment.

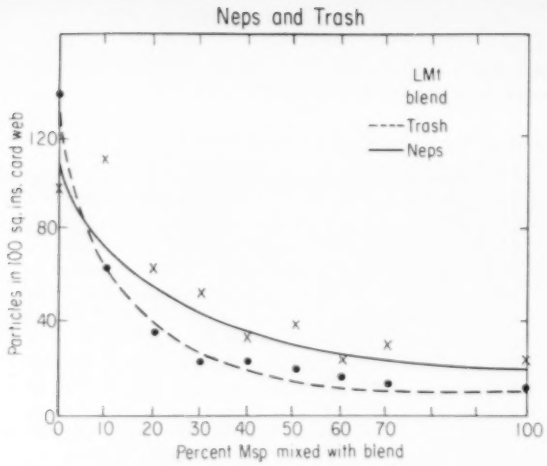
Croft Practices Pay Off

Croft's heavy movement in textured nylon seems founded on sound business practices. With young, experienced, and aggressive Nolan Helms as the pilot in both manufacturing and sales, Croft is growing.

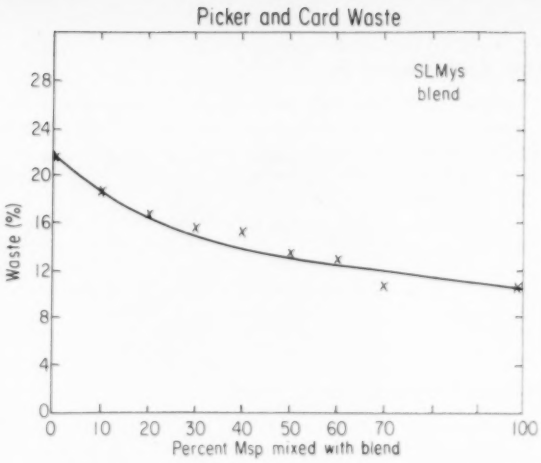
When Eston Croft, president, moved his mill to Fort Oglethorpe from Chattanooga in the early '50s, a single building was selected to fill all plant needs with the thought that the building would always be big enough.

Now five Croft buildings are scattered throughout Fort Oglethorpe. But soon all Croft production will be housed in one modern plant with two acres of floor space under one roof, and an 80x110-ft. adjoining steel building will be used for storage.

SALES PLANNING has replaced production as the big problem. Croft's key men make a study of 11 shades of carpets to program production to possible sales. A sales pitch is being made in 15 widely scattered strategic areas.



NEPS AND TRASH decrease rapidly as coarse Msp is added to the finer LMt.



PICKER AND CARD WASTE decrease as coarse Msp is added to SLMys.

Fineness Is No. 1 Factor
In BLENDING Low-Grade Cotton

"You can save many thousands of dollars a year by blending lower-grade cottons according to fineness," says J. N. Little, Anderson, Clayton & Co.

• This report, presented before the Textile Quality Control Association, also tells how to blend by bale densities and what effects to expect in blending white waste and card strips.

THE EFFECT OF VARIOUS FIBER PROPERTIES on manufacturing performance and yarn quality was recently determined by a series of tests run on low-grade cottons.

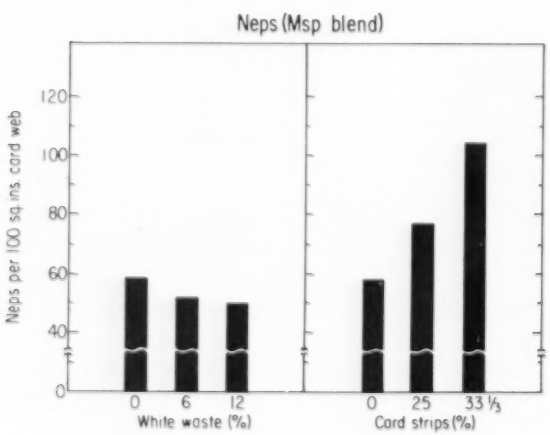
The first test dealt with the effects of fineness resulting from blending: $\frac{15}{16}$-in., 4.0-Micronaire Msp; $\frac{7}{8}$-in., 2.6-Micronaire SLMys; and $\frac{3}{4}$-in., 2.7-Micronaire LMt. cottons.

As the coarse cotton was added, neps and trash were reduced, picker and card waste was reduced, yarn strength increased, and yarn appearance improved.

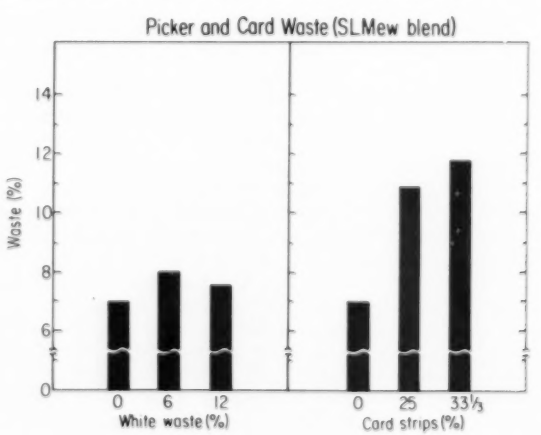
These tests further showed that the most practical way to blend cotton by fineness is to divide the bales into

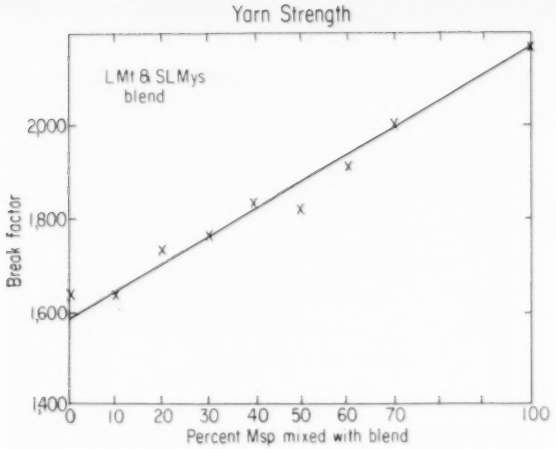
Condensed from a paper by J. N. Little, Walter T. Mathews, Jr., and S. C. Mayne, Jr., Anderson, Clayton & Co.

NEPS are slightly reduced when white waste is added to Msp; they increase rapidly as card strips are added.

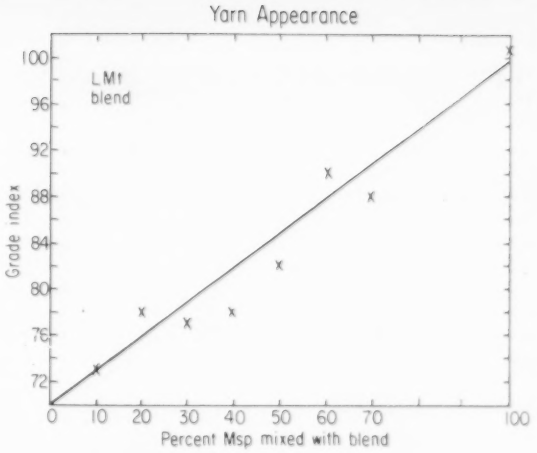


PICKER AND CARD WASTE increase slightly when white waste is added; the increase is rapid as card strips are added.





YARN STRENGTH increases as coarse Msp is added to a blend of LMt and SLMys.



YARN-APPEARANCE GRADE increases when coarse Msp is added to LMt.

groups having similar ranges of Micronaire numbers, such as 3.0 to 3.5, 3.6 to 4.0, 4.1 to 4.5, etc. There are two methods of blending these groups.

One method is to feed only one fineness group into each hopper. An advantage here is that the proportion of each group is correct; but the mix will be changed considerably if one hopper shuts down.

The other method is to feed some cotton from each fineness group into each hopper. Here there is no danger of the mix being changed if a hopper stops, but there is a disadvantage in that the different fineness groups feed at a different rate when placed in the same hopper.

Mills with old-style hoppers subject to frequent shutdowns would do better to blend the different finenesses in each hopper. If new hoppers are available, the separate-hopper method usually is better.

Fineness Affects Dyeing

Another factor to consider in blending by fineness is the effect on dyeing. Defects in dyeing can be kept to a minimum, however, by studying the fluorescence of stock under ultraviolet light.

Where a mill runs bales of different densities, best results are obtained by separating the cotton by densities and feeding each density into a separate hopper. Pre-openers attached to hoppers feeding compressed cotton will help reduce the number of changes in cleaning-machinery settings.

White Waste Blends Well

The second series of tests was made to determine the effect of blending white waste and card strips with cotton. Two cottons used were (1) ⅞-in., 3.4-Micronaire, 72-Pressley Msp and (2) 1 1/16-in., 4.0-Micronaire, 83-Pressley SLMew.

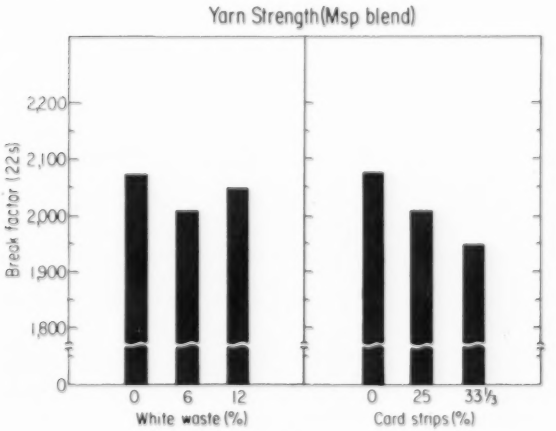
With each of these cottons, 6% and 12% reworkable white waste was blended for one series of tests; 25% and 33⅓% card strips were used for the other series. Each test was repeated three times for accuracy.

The results of the white waste blends on the whole were very good, and the findings indicate that up to 12% reworkable waste can be processed satisfactorily.

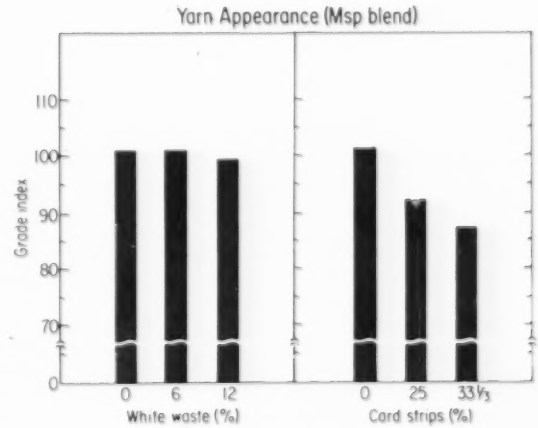
Results from blending card strips and cotton were as expected: card strips should be used only if lower quality and strength and higher waste can be tolerated by the end product.

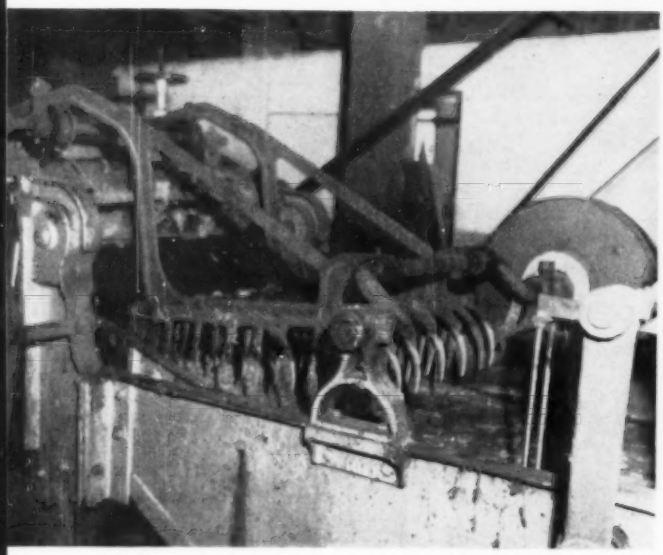
Specific results of some of the tests are shown in the accompanying charts.

YARN STRENGTH is not greatly affected by white waste added to Msp, but card strips lower strength rapidly.



YARN-APPEARANCE GRADE is affected very little by white waste added to Msp, but it drops rapidly when strips are added.





SCOURING is done in a four-bowl tray with a nonionic detergent.

STOCK DYEING is done in two kettles. An overhead hoist handles the stock.

NEW BLANKETS Spark Sales At Springfield Woolen Mills

Fabric styles in blankets and wearing apparel are changing constantly at Springfield Woolen Mills. Production starts with raw wool and extends through finished fabric. Manufacturing features are—

- Constant style changes
- Machine maintenance
- Materials handling

NEW COLORS AND NEW STYLES are sparking fabric sales at Springfield Woolen Mills Co., Springfield, Tenn. This plant is the latest operating mill bought by Chatham Mfg. Co., Elkin, N. C. North Star and Kenwood blankets, two names recently acquired by Chatham, are being made at Springfield.

Springfield is basically a blanket-manufacturing mill, but much of its production is on fancy wool and man-made-fiber wearing-apparel fabrics.

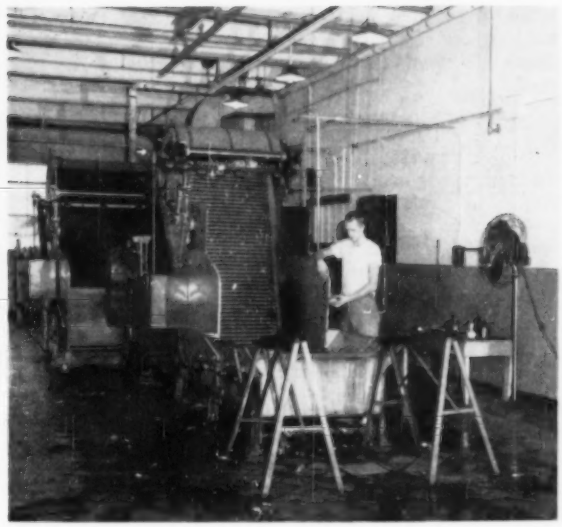
At present, Springfield is weaving blankets of all wool, 50% nylon and 50% wool, and 80% Orlon and 20% wool. Most wearing-apparel fabrics are all wool in solid colors and plaids with up to four colors. The number of colors used in the fabrics varies by the season, but over 100 colors are being woven or piece dyed at present.

The outstanding phases of manufacture at Springfield are its machine-maintenance program and modern materials-handling methods.

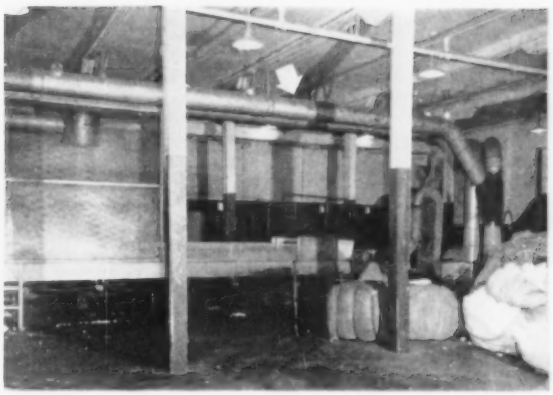
Machines throughout the mill are being cleaned and repaired constantly.

Fiber stock is handled through pneumatic ducts or by overhead monorail-hoist systems. Bobbins of yarn and yarn rewound on cones are transported by overhead conveyors.

Most wool used at the mill is raw wool, but some English noil is bought. Local Tennessee and Kentucky wools are used along with Western, Australian, and New Zealand.



DYED STOCK is run through a feeder, squeeze roll, and dryer in tandem for drying.



BLENDING is done in conventional pickers. Blended stock goes through the ducts (arrow).

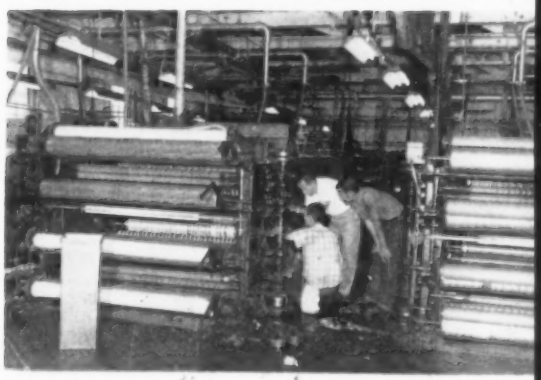
Production Starts With Scouring

The wool is scoured at the mill in a four-bowl scouring tray. For scouring, a nonionic detergent is used and no alkali is added. Then the wool is dried on a dryer.

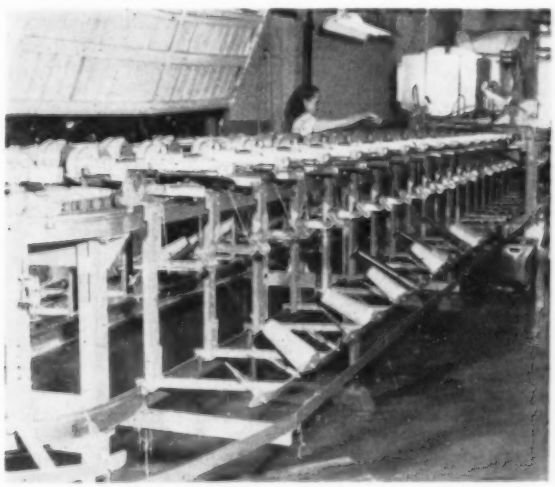
At this point in manufacture, the first of several materials-handling systems is used. The dried wool is transported through a pneumatic pipe to a room overhead, where it is baled and stored until it is needed.

Stock for goods that will not be piece dyed is pressure dyed in two kettles. The wet dyed stock goes through a feeder in tandem with a squeeze roll and dryer.

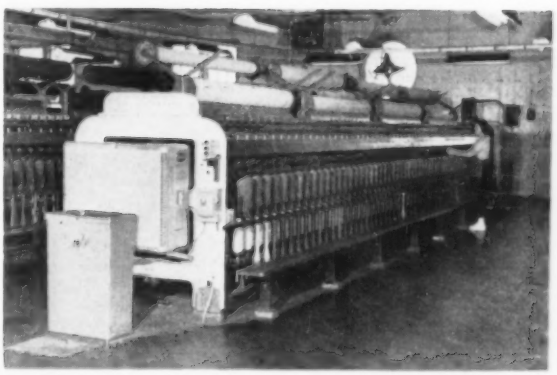
PLEASE TURN THE PAGE



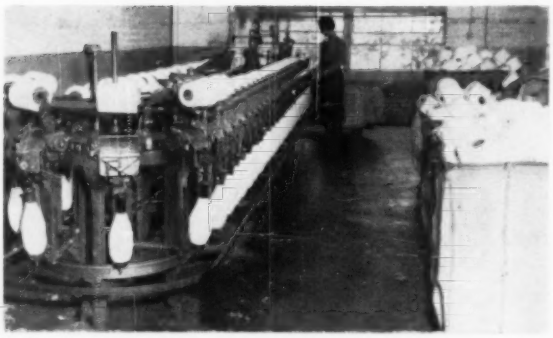
CARDING is done with an automatic feeder, breaker card, and double-finisher card in tandem.



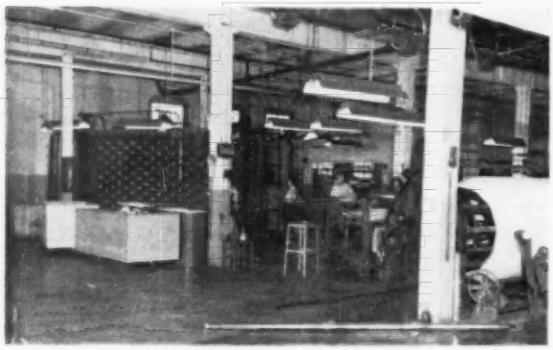
FILLING is rewound on loom bobbins for loom weaving. The operator blows off the winder regularly.



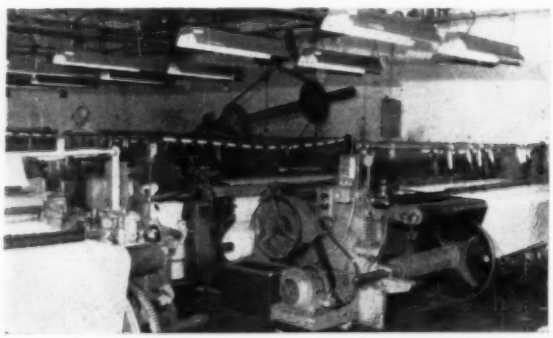
SPINNING is from jack spools. This frame was recently equipped with suction cleaning.



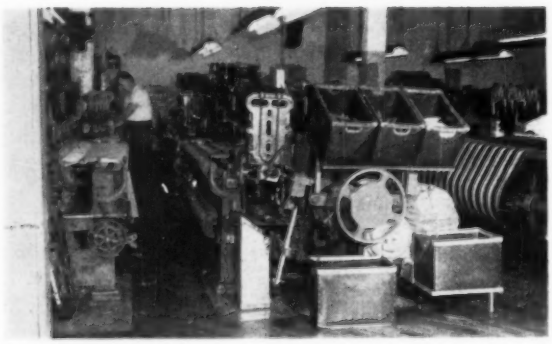
YARN WINDING for weaving machines is done on this winder. Cones for weaving weigh 3.3 lbs.



WARPING on solid colors, plaids, and other fabrics is done directly from a creel to a sectional warper.



MACHINE WEAVING is done on 12 weaving machines at 230 ppm.



LOOM WEAVING is done in multicolors on 40 W-3 looms at 114 and 128 ppm.

The dyed stock is conveyed by air duct to the picker room, where colors are blended in a picker. Two or three passes are made through the picker, depending on the stock.

Stock Is Picked Three Times

White wool stock and man-made-fiber stock go through three pickers in tandem. The stock can be oiled, if necessary, at all three pickers.

Two pneumatic conveyor ducts, one for dyed stock and one for white stock, convey the blended stock from the picker room to the card room.

Wool stock received in the card room is placed in an automatic feeder in tandem with a breaker card and a double-finisher card.

The roving is doffed on four 72-in. jack spools with 30 ends per spool.

Card speed on nine-cut yarn for blankets is 30 to 32 rpm., and production is 75 to 85 lbs. per hr. On 20-cut yarn for wearing apparel, the speed is 18 to 24 rpm. and production is 25 to 32 lbs. per hr.

Suction End Removal Is Tested

There are 22 spinning frames; 18 have double-line rolls, and 4 have single-line rolls. Front-roll speed on yarn for blankets is 141 rpm.; and on wearing apparel, it's 86 rpm Bobbins average about 1.1 lb. Rings are 6-in. gauge.

Several spinning frames were recently equipped with suction cleaning.

Relative humidity is 60 to 65% in carding and 55 to 60% in spinning.

Yarn numbers between 7 and 30 cut for both warp and filling yarn are rewound. Warp-yarn rewinding from spinning bobbins to cones averages about 2¼ cones per minute for 3.3-lb. cones on average yarn numbers.

Filling Is Rewound in Two Ways

Filling yarn is rewound from spinning bobbins in two ways for (1) 8¾-in. bobbins for looms and (2) 3-lb. cones on wooden cores for weaving machines.

The winder for the weaving machines is in the same room with the machines to save handling. Filling yarns are 8 to 20 cut.

An overhead conveyor moves all cones of warp yarn between a winder room and the warper room. A telephone is at each end of the conveyor so that yarn can be ordered as it is needed.

Warps are made on sectional warpers. Most single-color warps are wound from a creel directly to a sectional warper. Striped-color warps are wound from cones to jack spools. Then they are warped on a sectional warper. Warps are not slashed.

Machines and Looms Weave Fabric

There are 12 weaving machines in a separate weave room at the mill. The machines are 110 ins. wide and run at 230 ppm. Warp yarns are 8- to 20-cut yarn. Beams are transported from the warper room to the weaving machines by a monorail-electric-hoist system.

In another weave room, there are 40 W-3 looms. The looms have Knowles heads with multipliers. Sixteen looms are 110 ins. wide and run at 114 ppm.; the others are 92 ins. wide and run at 128 ppm. Loom efficiency is 85 to 90%, and second-quality cloth averages 2%.

Weavers fill their own magazines. Loomfixers tie in their own warps, and all warps are replaced with drawn warps.

Two looms are equipped with Chatham stop counters.

A general overseer of weaving, with assistants on the second and third shifts, has charge of looms and weaving machines.

Loop Shape Predicts

KNITTED-FABRIC SHRINKAGE

• A series of shrinkage tests on plain-knit cotton T-shirts reveals that shrinkage depends on the loop shape. For minimum dimensional changes, the number of courses per inch should be greater than the number of wales per inch.

By **HAZEL M. FLETCHER and S. HELEN ROBERTS,** U. S. Dept. of Agriculture

THE SHAPE OF THE KNITTED LOOP in plain-knit fabrics will determine the amount of shrinkage or stretch in laundering. Fabrics with elongated loops that have been stretched in finishing will shrink in length and often stretch in width. The width of the loop in stable fabrics is greater than the length of the loop.

Three T-shirts each of 33 brands were tested for shrinkage. The yarns used in knitting varied from 15.46s to 33.54s. All yarns were single ply with Z twist ranging from 12.6 to 22.8 tpi.

The ratio of wale spacing to course spacing, or the number of courses per inch to the number of wales per inch, ranged from 0.6 to 1.24. Fabric weights varied from 2.72 to 5.44 oz. per sq. yd.

Before laundering, the wales and courses were counted and three 10-in. distances were marked in the length and the width on the garment back. Two garments of each brand were laundered in an automatic washing machine according to the ASTM method of determining shrinkage.

One garment was air dried flat on a screen. The other garment was tumbled at 160° F. in an electric dryer for 1 hr. After drying, the garments were conditioned in a standard atmosphere and measured. After 5 and 20 launderings, the wales and courses were counted.

A linear relationship was found between the dimensional changes in length and width and the ratio of courses per inch to wales per inch. Shirts made of fabrics with a course-to-wale ratio of less than one shrank a great deal in length and many stretched excessively in width.

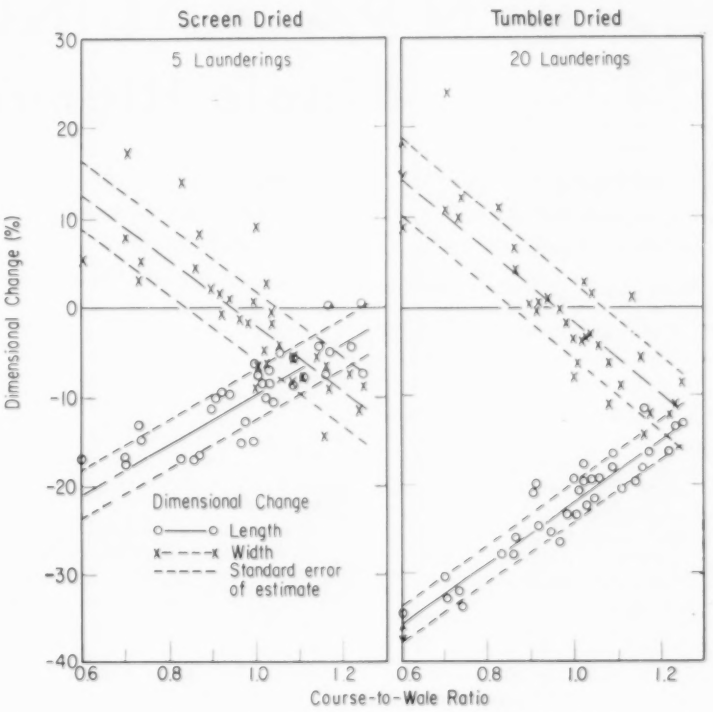
After laundering, the course-to-wale ratio of stable fabrics was about 1.2. Fabrics with this ratio before laundering shrank least. Distorted fabrics with a course-to-wale ratio less than one changed most.

Length shrinkage after five launderings ranged from 0 to 18% with screen drying and 9 to 29% with tumbler drying. In 20 launderings with tumbler drying, length shrinkage ranged from 11 to 35%.

In width, dimensional change after five launderings ranged from 14% shrinkage to 17% stretch with screen drying and from 15% shrinkage to 12% stretch with tumbler drying. After 20 launderings with tumbler drying, dimensional change ranged from 15% shrinkage to 24% stretch.

The straight lines in the chart for changes in width and length for five launderings with screen drying intersect at 1.11, 6.2. Fabrics with course-to-wale ratio of 1.11 shrank 6.2% in length and width.

Dimensional changes were greater for garments tumble dried. Straight lines for the relationship of dimensional change and course-to-wale ratio intersect at 1.24, 10.6 in five launderings and at 1.26, 12.5 in 20 launderings.



DIMENSIONAL CHANGE in laundering of plain-knit cotton T-shirt fabrics vary in relation to the course-to-wale ratio. Fabrics shrink less when the course-to-wale ratio is 1.2 or greater.

AUTOMATIC PACKAGING of sheets and pillowcases in polyvinyl chloride results in dirtproof, attractive packages. The conveyor delivers the packages to the shipping department.

At Dan River Mills—

MODERN PACKAGING METHODS
Kindle Higher Fabric Sales

New packaging machines, a complete new conveyor system, and the resulting layout with modern methods are giving Dan River Mills higher sales from more-attractive packages. Other mill benefits are—

- **More-rapid service to customers**
- **33⅓% increase in packaging production**

AN AVERAGE OF 6,000 STYLES of cloth is passing through the packaging department of Dan River Mills, Inc., Danville, Va., all the time. A weekly average of 4¼- to 4½-million yds. of cloth is packaged each week; for a six-day week, the yardage often hits 4¾ million.

About 25 new styles of fabrics are introduced every day. Most fabrics are woven patterns; but a few print fabrics come and go as orders demand. Many goods are piece-dyed.

Yet even with the numerous styles and high output, goods flow smoothly by predetermined schedules. Packaging production has been increased 33⅓% by installing conveyor lines keyed to centralized steel-strapping stations.

Packaging at Dan River takes up at finished fabrics and extends through shipping. Five separate departments are included: (1) inspection, (2) open stock, (3) put-up, (4) sewing, and (5) shipping.

Every style and pattern of finished fabric has a card that is approved by the designing department. A swatch is attached to the card for fabric shade. Every piece of finished fabric is inspected for shade and finish.

Fabric Is Inspected in Two Ways

Then fabrics are inspected in the inspection room by one of two methods, which is shown for every lot of cloth by a control sheet: (1) flat-folded or (2) machine-inspected.

1. About 65% of all fabrics are flat-folded. Men inspect these fabrics and flag defects with a strip of contrasting-color fabric. Then this inspected fabric is classified in another operation by major and minor defects with the point system to determine firsts and seconds.

2. The other 35% of fabric is

inspected by women on inspecting machines, where it is rolled on tubes for shipment in rolls. Inspection here is by the same general method used in inspecting flat-folded cloth.

Inspection of both types of cloth packages is for gray and finishing defects. Gray-mill defects checked are mispicks, start-ups, draw-backs, slubs, etc. Finishing defects checked are oil stains, other stains, holes, torn selvages, etc.

All cloth is inspected by given lots, if possible, before another lot is started.

Flat-folded cloth is removed from classified inspection on the first part of a conveyor system that extends much of the way through the entire plants. At the end of the convevor, flat folds are tied with an automatic bundle-tying machine.

Inspected fabric is moved to either the open-stock or put-up department.

Open Stock Controls Three Jobs

Work done in the open-stock department is (1) shading, (2) invoicing, and (3) packaging.

All cloth is broken down by orders or lots. Goods are handled in the open stock area by:

1. Order assignment of flow of goods.
2. An invoice is on the goods by each style or on a truck containing a given lot of goods.
3. Goods are shaded by each order.
4. The residue of each order after shipment is put in open-stock bins, where a minimum of 1,500 yds. per style is held, if possible.

Orders of fabric are checked for shade under color-matching lamps. Flat folds are matched in cut lengths. Tubed or rolled stock is matched by cutting swatches and comparing them on a flat table under lamps.

Shaded stock not invoiced to be shipped immediately is stored in racks.

Strapping Machines Reduce Work

Goods for shipment are made up on a conveyor in cases by invoice; then they are packed into telescope containers or regular slotted containers; case numbers are assigned and printed in sequence; a prepunched card printed with the case number is attached to each case and is used to show the location of the case in storage.

Cases are weighed at a station on the live convevor system. After the boxes are weighed, power and roller convevor lines carry them to the strapping stations that consist of two push-button strapping machines.

Formerly four men were needed to handle packaged boxes. Now a single operator handles both strapping machines and weighs and labels the containers, which has released the additional men to reassignment to production operations.

Conveyor System Moves Goods Fast

The conveyor system permits the smooth, quick flow of goods from one station to another. An electronically controlled chain belt separates large and small boxes so that large boxes run past a special strapping machine equipped with a compression device.

This machine has space for three straps at once. The operator merely starts the straps in guide slots; then he controls the entire cycle of tensioning, sealing, and cutting automatically. Overlapped strapping ends are sealed with spot welds. Smaller sizes of boxes are strapped by the same operator on a semiautomatic machine.

After being strapped, boxes to be shipped immediately are moved by the conveyor line directly to the shipping department.

Punched Cards Control Storage

Goods to be stored for later shipment are moved up an inclined conveyor to a storage area above. Goods are stored in tiered racks in this warehouse in sequence by section number and rack number. The punched cards from the packaging department show this sequence, and they are filed in a tub file.

When these goods are to be shipped, cards are pulled from the tub file and the case number and location are listed on a master sheet. A crew pulls the goods from the racks with electric fork trucks by master sheets. Then the boxes are sent by the conveyor system to the shipping department, where they are checked and assembled to be loaded on trucks or boxcars.

Piece-Goods Sales Are Large

The put-up and sewing departments are separate. Over-the-counter-sales fabrics are of course designed for home sewers and have become an important part of Dan River's production. These goods are assigned to the put-up department from finished-inspection, and they are carried to the put-up room by a live conveyor. They are stored in bins here by bin number and section number.

Most of these goods are put up in 25- to 30-yd. double-and-rolled bolts. There's also a special put-up of 15- and 20-yd. pieces.

Another special put-up that has become tremendously important is a special display case of 4-yd. lengths of women's dress fabric. Every length is a different style or color. Two display cases are packaged together to make 50 different fabrics.

The over-the-counter put-up department is self-sufficient. Invoice operators in the center of the room schedule orders for put-up and shipping. Goods are packaged at conveyor stations in much the same way they are handled in the open-stock department. Then they're sent to the shipping department by a conveyor.

Sheets and Pillowcases Are Made

In the sewing room, sheets and pillowcases are fabricated, packaged, and shipped. Goods are requisitioned from inventory in the finishing department.

Goods for sheets are doubled twice and are cut to length on a table. Then they are hemmed, inspected, folded, and pressed.

Finished sheets are placed around U-boards and are wrapped with polyvinyl chloride in an automatic wrapping machine. They're packed 1 doz. to a carton. Then they are removed from the center of the room on an inclined conveyor that takes them to the shipping department.

Sheets are white and in standard colors of blue, green, yellow, and pink. Striped sheets are various combinations of all the colors. Much of the production is on fitted sheets in white, colors, and stripes.

One Machine Has Three Operations

Goods for pillowcases come from finishing single-doubled and rolled. In one machine operation, they're (1) stitched down the side to form a tube, (2) cut to the correct length, and (3) overedged across the bottom.

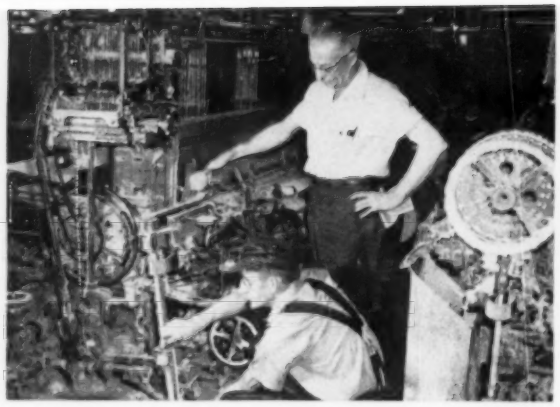
The pillowcase is hemmed. Then it is turned and run through a mangle for pressing. It's folded in an automatic folding machine.

Pillowcases are placed in U-trays, two to a tray. They're wrapped in polyvinyl chloride on an automatic wrapping machine 2 doz. to a carton. Then they go to the shipping department by the same conveyor that removes sheets.

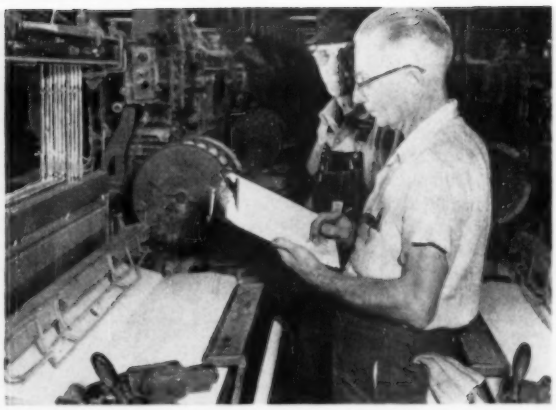
Fashion Borders Are High-Styled

Fashion borders for sheets and pillowcases have become a large part of Dan River's domestic sales. The borders are woven in decorative patterns with metallic yarns, clip spots, and many other weaves. These sets are put up in gift boxes. Scheduled national advertising in seven consumer magazines has done much to increase sales.

A fairly recent development with the company is napped cotton blankets. These blankets are printed in many colors and patterns and are rapidly becoming a staple fabric in Dan River's production.



TWO MEN working together inspect about three looms per hour on one shift.



CONDITION of each loom motion is marked with colored pencil on a form.

How One Mill INSPECTS LOOMS And Grades Its Loomfixers

• Do you have certain looms or sections that are chronically poor performers? Do you get alibis and conflicting reports when you try to find who, or what, is at fault?

• Here's what one mill did to keep its looms in good condition and appraise the work of its loomfixers.

Here Is the Problem

The repair and maintenance of looms is a major problem in the weave room. The power loom is composed of so many complex mechanisms that it is hard to keep it in top mechanical condition. A loom will continue to operate with worn, broken, or misaligned parts.

Weavers and loomfixers will sometimes let a loom run, knowing that it needs repairs. Such a loom will often produce off-quality cloth, its output will suffer, and it will be damaged mechanically.

When mills operated one shift, the loomfixers kept their looms in good repair. A loomfixer knew that if he neglected an ailing loom today he'd have to fix it tomorrow. He also knew that any improper loom settings or any off-quality cloth from his looms could be traced directly to him.

Loomfixers Were Proud of Sections

The loomfixer could also take pride in his work. Each one tried to have a section of which he could be proud. He considered each loom as his own.

When mills changed to two-shift operation, loom maintenance became more complex. Now there were two men to share the work and the responsibility. Most of them got along together very well. They'd compare notes at shift change and plan maintenance schedules.

Then the third shift was added, and it multiplied the loom maintenance problem. It's hard to get three people to cooperate voluntarily. Usually one of the three will not do his share of the work. Then one or both of the other loomfixers on the section will become discouraged and dissatisfied. Soon all three loomfixers are trying to pass the buck. Each blames the other for the poor condition of the looms.

It's hard to find which loomfixer is at fault when shoddy work is performed. Experienced loomfixers can make temporary repairs that will keep the loom going until after the next shift change. Second hands often cover up for their loomfixers because they want to keep the looms running and turn out more production than the other two shifts.

Usually, the shift that has the highest output is the one that is doing the least repair and maintenance work. If a loom loses production on one shift while it is stopped for repairs, it could produce more and better cloth on the following shifts.

The generally accepted practice is to divide each section into three equal parts for maintenance purposes. Each loomfixer is held responsible for routine maintenance work on his allotted one-third of the section.

Follow-Up Is Necessary

This division of each section works very well when there is close, impartial follow-up and when the supervisors on each shift cooperate. But in too many instances the loomfixers can find ways to dodge work and pass repair jobs on to the next shift.

The way that loom repair and maintenance work is handled probably causes more friction between weavers, loomfixers, and second hands than any other one thing in the weave room.

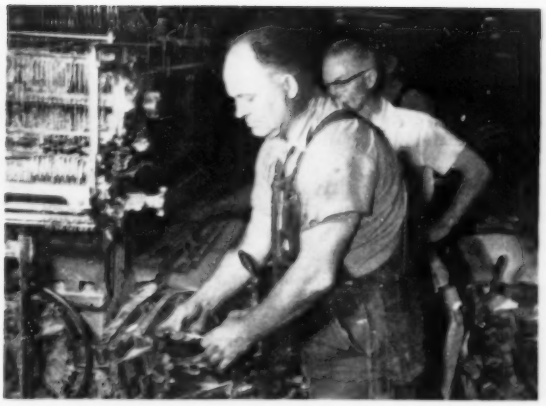
Here Is One Mill's Solution

One mill with several thousand E-model, X-2, and XD looms weaving a variety of fabrics decided to do something about its loom-maintenance problem. This mill had been operating under the usual setup of divided sections, routine inspection, spot checks, and follow-up on major repair jobs.

But there was still disagreement about who was a good loomfixer and which ones were doing the most work. So the management worked out a system of inspection that not only showed the condition of each loom but also served as a basis for grading the loomfixers.

The system is not a cure-all. Many bugs had to be worked out of it, and it had to be sold to weavers, loom-

COMPLETED FORM is given to the loomfixer, and a copy is placed in a record book.



LOOMFIXERS follow up closely; many of them ask to have their looms inspected.

fixers, and second hands. But it is working well and provides something besides personal opinion by which to evaluate the loomfixers and their looms.

Looms Are Inspected Periodically

Here's how the system works:

Two men, working together, inspect every part of each loom in the mill periodically. They have a work sheet on which they list each loom that an individual loomfixer is responsible for. Opposite the loom number are 10 boxes for the 10 principal loom parts or motions.

When they check each part of a loom, the inspectors mark a code figure in the appropriate box opposite the loom number. The figure denotes the condition of that particular part or motion.

The code figures that are used and their meanings are:

1–A new part, perfectly set by gauge

2–A new part set to close tolerances, or a slightly worn part set perfectly

3–A serviceable part showing some wear and set to gauge tolerances

4–A part that needs to be reset or replaced

5–A worn-out part that is not set correctly.

Major Fault Is Written on Report

In addition to marking each motion with a code figure, specific faults are spelled out on the report. When applicable, the code figures are made with colored pencils. A red figure denotes bad settings, and a blue figure shows that parts are worn.

When all the looms that are assigned to a particular loomfixer have been checked, he is given a copy of the report, which is always made out in duplicate. But before he gets the report, it is tabulated and graded. Thus he can see how his job is rated and also how it now compares with the two previous inspections.

The method of grading is simple. All items marked 1, 2, and 3 are standard or above. Items marked 4 and 5 are below standard. All items receiving a 4 or 5 are added together and divided by the number of looms that are checked multiplied by the 10 parts or motions. If a loomfixer has 28 looms and he has 14 parts or motions marked below standard on the report, his grade is 5%.

Each Loomfixer Is Graded

These ratings are then classified as follows:

0 to 5%–Very good
5.1 to 9.0%–Good
9.1 to 12.5%–Standard
12.6 to 18.0%–Below standard
18.1 and above–Poor

When a job is graded below standard or poor, the second hand goes over the report with the loomfixer and offers to help him in any way he can to get a better grade next inspection. If the grades continue to be substandard, disciplinary action is taken.

The two inspectors work together and get about three looms per hour. They check jobs at random so the loomfixers will not be able to tell when their looms will be inspected. For instance, they may check the looms on a section that are assigned to the first shift and then not inspect the second- or third-shift looms for several weeks.

In addition to the loomfixers' individual grades, a consolidated report is made twice a year. This report gives an average grade for each room, each shift, and total for the mill. This grading system fosters a wholesome competitive atmosphere because each loomfixer and second hand wants to make a good showing.

Here Are the Results

The results that this mill has obtained from its inspection and grading system have been good. In addition to the many intangible benefits and those that can't be evaluated in dollars and cents, the mill has increased weaving efficiency 3% and has reduced loom supply costs 15%.

To keep track of supply costs, a weekly report is prepared and posted. The loom supply costs for each section are listed in units of 1-million loom hours of operation. Any section that has a higher cost than it had for the same week last year has its figures marked in red. This report has done much to keep loomfixers from using unnecessary parts.

Among the many advantages of the inspecting and grading system is the fact that standard loom settings and preventive-maintenance practices have been adopted. Previously, many of the loomfixers and second hands were opposed to loom gauges and systematic overhauling.

Alibis Are Eliminated

Another advantage is that everyone –weavers, loomfixers, second hands, and overseer–can look at the reports and see what the loomfixers are doing and also learn the mechanical condition of each loom. The report discourages any alibis or attempts to pass the buck.

Everyone concerned gains certain advantages from the system. The management gets more production at less cost; the overseer gets a true picture of loom maintenance; the second hand gets better cooperation from his employees and from personnel on the other shifts; the loomfixer has his work properly evaluated; the weaver produces more cloth with less work because his looms run better.

With this system of inspection, the second hands cannot uphold their loomfixer when they shirk their share of maintenance work. Each loomfixer is judged impartially on his own merits.

A study of the reports often dis-

CONTINUED ON PAGE 136

Use Your Mill Test Data To Show YARN IRREGULARITY

Your present test data on file can be used to show how accurately your yarns and fabrics are being made. Statistical equations applied to the data will answer three questions on any phase of yarn or cloth manufacturing—

1. What is the average error?
2. How large is the probable error?
3. How often will this error be exceeded?

By ERNEST R. BECKNER

IN THIS DAY OF ADVANCED SCIENCE, nearly every variable is measured and expressed in numerical values. And these values represent varying degrees of accuracy.

In a textile mill, such variables as sliver weight, sliver unevenness, yarn number, yarn breaking strength, cloth weight, cloth breaking strength, and the percentage of defectives for all these factors are measured and expressed in numerical values.

The varying degree of accuracy of these factors is sometimes stated, but sometimes it is not expressed.

In the past, textile production men were given a list of test results; and they added the figures to get the average figure.

But today, the modern mill manager needs to know more about test figures: (1) what is the average, (2) how large is the probable error, and (3) how often will the error be exceeded. From the last two answers, he judges the reliability of the first answer.

Table 1

Bobbin No.	Breaking factor	Difference	Difference squared
	X	$X - \bar{x}$	$(X - \bar{x})^2$
12	2,017	108	11,604
6	2,045	80	6,400
1	2,065	60	3,600
2	2,070	55	3,025
8	2,080	45	2,025
4	2,111	14	196
3	2,150	25	625
9	2,151	26	676
5	2,161	36	1,296
10	2,194	69	4,761
7	2,227	102	10,404
11	2,230	105	11,025
TOTAL Σ	25,501		44,697

BREAKING FACTOR of each of the 12 bobbins of filling in the Mark-1 test is the basis for a formula that can be applied to all yarns.

Simple Analysis Is Significant

Most mills have on file many figures on test results, and simple arithmetic averages of these test results often provide the desired answers to problems of yarn and fabric irregularity.

But in many instances, especially in those called "inconclusive," very significant results can be obtained with a simple analysis. The analysis will give excellent results on simple probabilities, precision, frequency distributions, sample sizes, correct sampling techniques, significance of tests, and control charts.

The degree of accuracy can be checked for any type of yarn. At our mill, we had been running a 50-50 blend of staple rayon for filling yarn. Fibers were 1.5-den., 1 5/8-in. and 3-den., 1 5/8-in. staple; 1.32-hk. roving was used.

Formula Shows Test Reliability

Recently we changed the filling to 100% 1.5-den., 1 5/8-in. rayon stock, and we anticipated a necessary change in twist multiplier in the 1.32-hk. roving. But first we analyzed the old and new yarns for the degree of accuracy.

The control group, the 50-50 blend with original twist, was designated as Mark 1; the 100% blend with 1.5-

den., 1⅛-in. staple and the original twist was Mark 2; the new twist in 100% blend 1.5 den., 1⅛-in. staple was Mark 3.

As a preliminary test, we selected 12 bobbins of 20s filling spun from each of the three lots and ran size and breaking-factor tests on them. Table 1 shows the breaking factor with all computations for the Mark-1 test.

The following formula is derived from the results in the table:

Average $\overline{X}$ is 2,125

$\sigma = \sqrt{0.4661} = 68$

To correct this figure for sample size:

$$\sigma' = \sigma \sqrt{\frac{N}{N-1}} = \sigma' = 68 \sqrt{\frac{12}{11}} = 71$$

Summarized Data Show Accuracy

Table 2 shows the average breaking factor for the Mark-1 test and the summarized results from similar tests for Mark-2 and Mark-3 yarns. The results shown in Table 2 indicate:

1. With Mark-1 roving as a control or reference point, the change to all 1.5-den. yarn under Mark 2 brought a need for a change of twist multiplier because the breaking factor dropped.

2. The change in twist multiplier for Mark-3 roving was an improvement and increased the breaking factor 7½%.

3. Although the precision of

CONTINUED ON PAGE 136

Table 2

	Mark 1	Mark 2	Mark 3
$\overline{X}$	2,125	2,088	2,285
σ'	71	76	123
SE	20.5	22	35.5
2 SE	41	44	71
Precision @ 0.95	2,125 ±41	2,088 ±44	2,285 ±71
Precision @ 95%	2,125 ±1.9%	2,088 ±2.1%	2,285 ±3.1%
(SE = standard error)			

COMPARATIVE FIGURES for all three yarns in the test are summarized from the breaking-factor tests; variation is ± 1.9 to ± 3.1% for the three.

Table 3

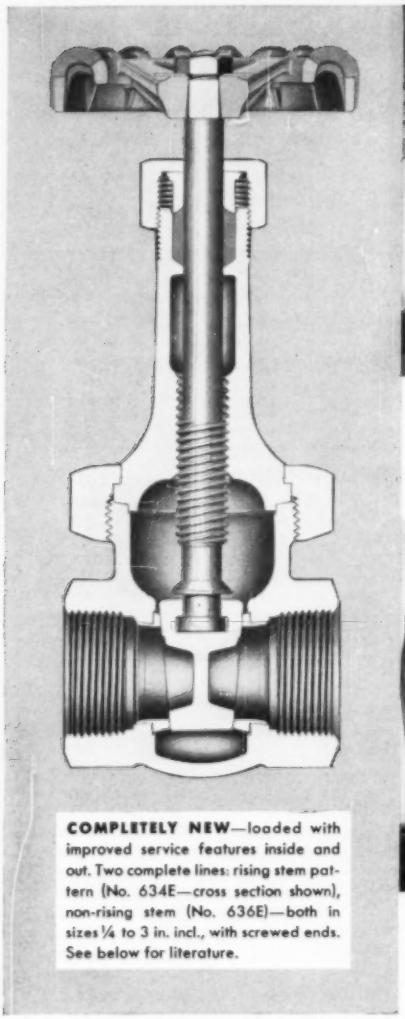
σ'	12 samples	25 samples	50 samples	75 samples	100 samples	200 samples
71	$71\sqrt{12} = 20.5$	$71\sqrt{25} = 14.2$	$71\sqrt{75} = 10$	$71\sqrt{100} = 8.2$	$71\sqrt{100} = 7.1$	$71\sqrt{200} = 5$
100	$100\sqrt{12} = 28.9$	$100\sqrt{25} = 20$	$100\sqrt{50} = 14.2$	$100\sqrt{75} = 11.6$	$100\sqrt{100} = 10$	$100\sqrt{200} = 7.1$
125	$125\sqrt{12} = 36.2$	$125\sqrt{25} = 25$	$125\sqrt{50} = 17.7$	$125\sqrt{75} = 14.5$	$125\sqrt{100} = 12.5$	$125\sqrt{200} = 8.8$
150	$150\sqrt{12} = 43.4$	$150\sqrt{50} = 30$	$150\sqrt{50} = 21.2$	$150\sqrt{75} = 17.3$	$150\sqrt{100} = 15$	$150\sqrt{200} = 10.6$
200	$200\sqrt{12} = 57.7$	$200\sqrt{25} = 40.1$	$200\sqrt{50} = 28.4$	$200\sqrt{75} = 23.1$	$200\sqrt{100} = 20$	$200\sqrt{200} = 14.2$

STANDARD ERROR changes with the number of samples taken for given yarns or fabrics. Larger numbers of samples decrease the errors.

Table 4

Difference	@ 0.90	@ 0.95	@ 0.997
25	$N = 2\left(\frac{1.645 \times 71}{25}\right)^2 = 44$	$N = 2\left(\frac{1.960 \times 71}{25}\right)^2 = 62$	$N = 2\left(\frac{2.576 \times 71}{25}\right)^2 = 107$
50	$N = 2\left(\frac{1.645 \times 71}{50}\right)^2 = 11$	$N = 2\left(\frac{1.960 \times 71}{50}\right)^2 = 16$	$N = 2\left(\frac{2.576 \times 71}{50}\right)^2 = 27$
100	$N = 2\left(\frac{1.645 \times 71}{100}\right)^2 = 3$	$N = 2\left(\frac{1.960 \times 71}{100}\right)^2 = 4$	$N = 2\left(\frac{2.576 \times 71}{100}\right)^2 = 7$
200	$N = 2\left(\frac{1.645 \times 71}{200}\right)^2 = 1$	$N = 2\left(\frac{1.960 \times 71}{200}\right)^2 = 1$	$N = 2\left(\frac{2.576 \times 71}{200}\right)^2 = 2$

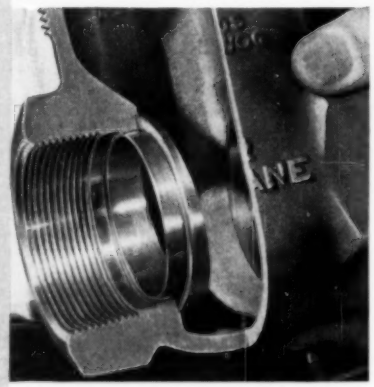
PRECISION LEVELS of this formula indicate that decreasing the difference increases the required number of tests to a great extent.



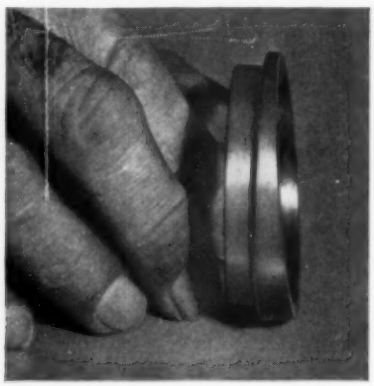
COMPLETELY NEW—loaded with improved service features inside and out. Two complete lines: rising stem pattern (No. 634E—cross section shown), non-rising stem (No. 636E)—both in sizes ¼ to 3 in. incl., with screwed ends. See below for literature.

NEW CYLINDRICAL BODY SHAPE—a proven design on high-pressure steel valves—increases strength without added bulk, distributes pressure load uniformly, resists distortion and leakage at seats.

NEW, STRONGER HEX ENDS, better integrated with body, eliminate sharp contours, give entire valve more rigidity under line strains. Wider hex faces allow firmer wrench grip for easier installation. Marring less likely.



NEW, EXPANDED-TYPE BODY RINGS insure long, tight-seating service life. They're rolled in, can't work loose. Shoulder at bottom of end threads restrains excessive entry of pipe against possible seat damage.



NEW EXELLOY, 12% chromium steel body rings give a hard bearing surface, highly resistant to wear, indentation, scoring and foreign matter damage. Easily replaced bronze disc takes the brunt of normal wear.

New design for tough service...easy maintenance

300-Pound Wedge Disc Bronze Gate Valves

Rising Stem and Non-Rising Stem Patterns

A new body shape that distributes greater strength uniformly against internal stresses and external strains . . . better integrated hex ends, huskier and wider, that add to body rigidity and give a firmer wrench grip . . . new rolled-in, high wear-resisting alloy body rings that don't work loose . . . easily renewed wedge disc—these are typical important features of new Crane bronze gate valves.

On your toughest services, these valves assure ultimate durability . . . new ease of application . . . low-cost repairability. And they're priced no higher than ordinary 300-pound integral seat bronze valves.

Easy to Repair—The Disc Takes the Wear

After long, hard service the hard Exelloy (12% chromium) body rings show no appreciable wear. Normal seating wear is taken by the bronze disc. When needed, a new disc, easily slipped onto stem, provides a practically new, tight-seating valve.

Circular Gives The Facts

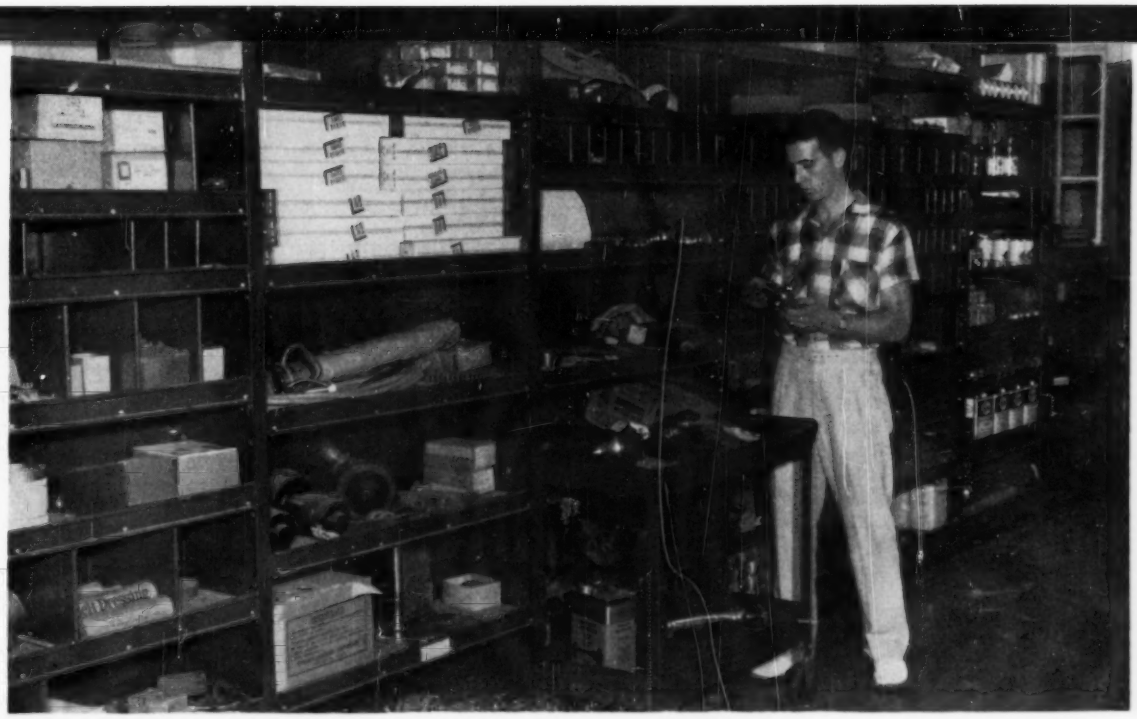
For complete technical data on both rising stem and non-rising stem patterns . . . size listing, etc., get Circular AD-2340 from your Crane Representative, or by writing to address below.

CRANE VALVES & FITTINGS

PIPE • PLUMBING • HEATING • AIR CONDITIONING • KITCHENS

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

For more data, circle A-30 on Reader Service Card



BETTER PARTS can often be obtained by comparing the parts from old orders with parts from other suppliers or manufacturers.

Use This Checklist For Lower SUPPLY COST

• One of the biggest mistakes in ordering supplies is in constantly repeating old orders. Use this checklist of parts ordering to see if your methods can be improved.

By ERNEST W. FAIR

ROUTINE ORDERING OF PARTS is often done inefficiently because it is done the same way each time. To order parts wisely, you must consider the future performance of the parts and their effect on equipment and machinery.

Haphazard ordering of parts always results in future trouble. Failure to receive maximum value for your expenditure is a waste of money. The following checklist for ordering parts will reduce cost and insure maximum performance of parts and machinery.

1. Set a standard for the life of each part. Measure the cost of the part in terms of its useful life. A part that costs a few cents more than another may be cheaper than the low-cost part.

2. Learn all you can about the metal or other material used to make the part because these qualities may determine the actual value of the part. All metals are not the same. They vary with their use on given machines, and some metals are better than others for a given machine part.

3. Study the delivery of parts. How soon do you receive them? What protection does the container give to delicate parts?

Parts Cost Is Less in Large Lots

4. Determine how many parts you should order at once. Check all other correlated parts of the machine to be sure they are in good condition; also reorder these worn parts to be sure the necessary repairs give peak efficiency.

5. Check to see if there is a price advantage in buying several parts at once. Additional parts can often be purchased at less cost than one part.

6. When parts other than the manufacturer's original parts are ordered, be sure you furnish every specification such as teeth spacing for a gear, diameter of a rod or shaft, etc. Delays in securing replacement parts after the wrong part has been received can be more expensive than ordering the original part in the first place.

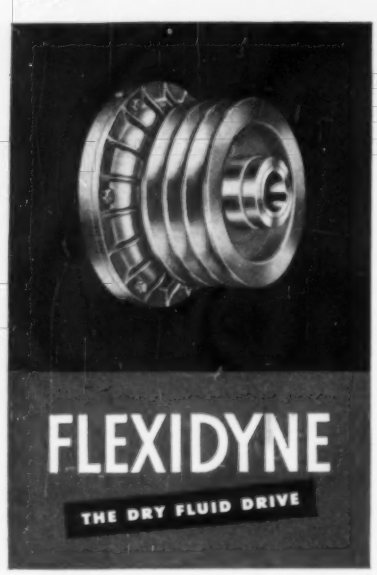
7. Be sure you have proper accessories such as tools and special nuts and bolts to make the parts installation.

8. Compare listed prices with actual delivery prices for heavy parts. This comparison is particularly important when parts are shipped a long distance. Price comparison should always be made on a basis of parts set down in your plant and not at the supplier's home office.

9. Be sure the employee who orders parts is correctly trained. Suppliers point out that most errors occur from mistakes in writing purchase orders.

10. When a part is needed in a hurry, check the speediest and safest method of delivery and specify this routing on the order.

11. Whenever it is possible, group your orders of parts from a given manufacturer to save on transportation costs.



NEW DRIVE INSURES AMAZING SOFT STARTS FOR TEXTILE MACHINERY!

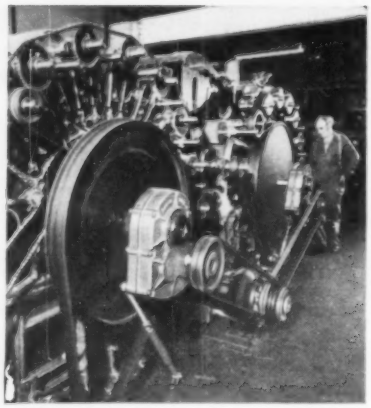
Flexidyne is an entirely new type of drive in which a dry flow charge of heat treated steel shot is employed to start loads *with fluid ease.* It accelerates quickly to full speed—and then operates *without slip at 100% efficiency.*

This revolutionary drive is being used with great success in:

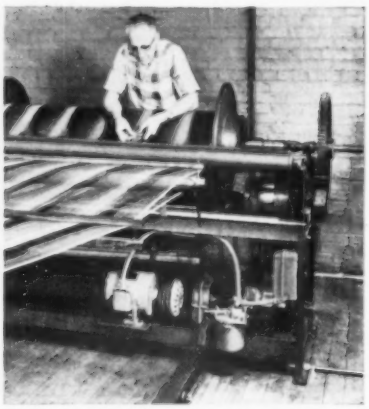
- cotton cards
- wool cards
- roving frames
- fly frames
- spinning frames
- slubbers
- openers
- tenter frames
- condensers
- extractors
- pickers
- beaters
- twisters
- warpers
- slashers
- cloth rolling heads
- cloth shearing machines
- and for synthetics, too

Ask your Dodge Transmissioneer for the full story. Or write us for Bulletin A-653.

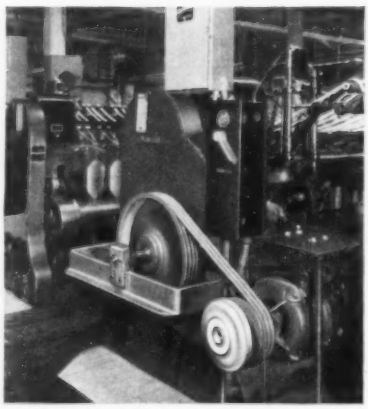
CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look in the *white* pages of your telephone directory for "Dodge Transmissioneer."



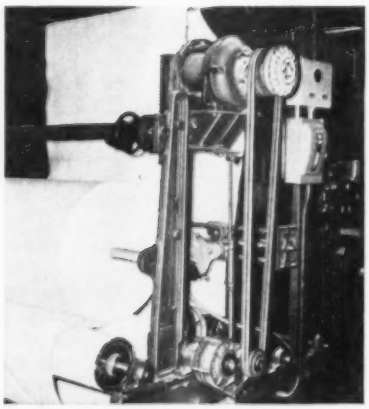
WOOL CARDS



LONG RAIL BEAM WARPERS



ROVING FRAMES



CORDUROY ROLLING HEADS

DODGE
of Mishawaka, Ind.

DODGE MANUFACTURING CORPORATION, 1400 Union Street, Mishawaka, Indiana

South Texas Produces
HIGH-GRADE 1958 COTTON

USDA fiber and spinning tests on 1958 cotton from the Coastal Bend area show that in comparison with 1957 cotton—

- **Yarn strength is up**
- **Staple length is average**
- **Waste is lower**
- **Appearance is off**

BY F. L. GERDES, Cotton Technologist, USDA, Retired

THE UPPER AND LOWER COASTAL BEND AREA of Texas, from below Corpus Christi to near Houston, produced a high-grade crop of over 300,000 bales this season. This bumper crop was harvested and ginned under ideal conditions.

The crop set a record insofar as breaking strength of yarn is concerned; but the yarn appeared to be slightly off in appearance grades.

The trend toward higher yarn strength during the last five years is associated with a general tendency of the fiber produced in the area toward increased tensile strength, decreased Micronaire values, and lower maturity index.

Micronaire Values Average 4.3

The downward trend of Micronaire values and maturity are closely related to and responsible for those factors that cause neppiness in the card web and lower appearance grade. Early-season samples had Micronaire values that averaged 4.3, equivalent to the 1954-58 average; but maturity was below the five-year figure.

Manufacturing waste was unusually low this season, and the average percentage was equivalent to that usually associated with the general run of Strict Middling cotton. The figure was slightly better than classers' average designation of Middling plus. This fact was evident in spite of reduced fiber-length uniformity, a property that usually affects manufacturing waste.

The important cotton varieties grown in the lower Coastal Bend area in 1958 were Delfos 9169 (18%), Deltapine 15 (16%), and Lankhart (28%). In the upper area, 77% of the cotton planted was of one variety, Deltapine 15. Delfos and Deltapine generally have longer staple lengths and produce stronger yarn than the other varieties planted in this area.

The Coastal Bend crop compared favorably with the Rio Grande Valley crop with respect to a number of fiber and yarn properties for early-season lots. The exceptions were fiber-length uniformity, maturity, and manufacturing waste.

Based on data from USDA fiber and spinning tests

1958 COTTON compares favorably with the five-year average except for appearance, neppiness, and uniformity. Yarn strength has increased progressively, except for a slight setback in 1956; and manufacturing waste is lower than average.

Texas Coastal Bend Cotton

Property	Season					
	1954	1955	1956	1957	1958	Average
Grade index	101	102	101	103	102	102
Staple length (1/32 in.)	32.3	33.4	32.2	33.6	32.8	32.9
Upper-half mean (ins.)	1.04	1.04	0.99	1.02	1.01	1.02
Uniformity ratio	80	81	82	80	78	80
Micronaire value	4.5	4.3	4.1	4.3	4.3	4.3
Maturity (%)	80	79	77	79	78	79
Tensile strength (1,000 psi.)	78	80	83	82	81	81
Manufacturing waste (%)	7.2	8.1	8.2	8.2	7.5	7.8
Neps (per 100 sq. ins. of card web)	12	6	15	11	16	12
Yarn-appearance index	106	109	105	106	99	105
Yarn break factor	2,080	2,242	2,196	2,240	2,285	2,189

Automatic Winders for Rewound Filling

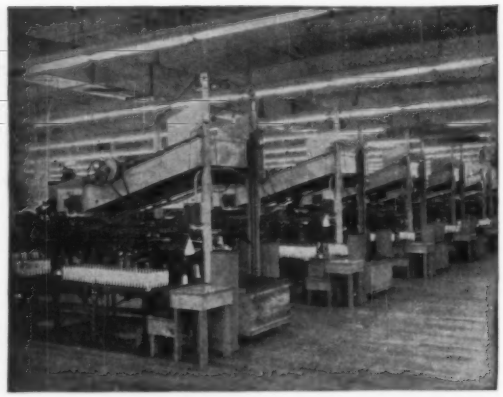
to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.



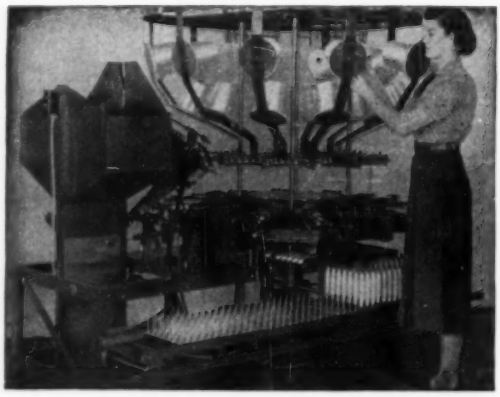
Abbott Traveling Spindle Automatic Quillers

For winding coarse cotton, worsted, woolen yarns, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

Abbott Model II High Speed Automatic Quillers OVER 10,000 RPM

For winding fine cotton, spun synthetics, filament rayon and nylon, etc. with automatic pinboard attachment or wide belt inspection conveyor, or bobbin stacker.

Production up to 2500 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or into wide belt conveyor.

One operator can run several machines producing up to 2000 bobbins per hour per operator.

Can be equipped with measured yardage device for two-shuttle looms.

ABBOTT MACHINE CO., INC.

WILTON, NEW HAMPSHIRE

SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.

TUFTED TEXTILES

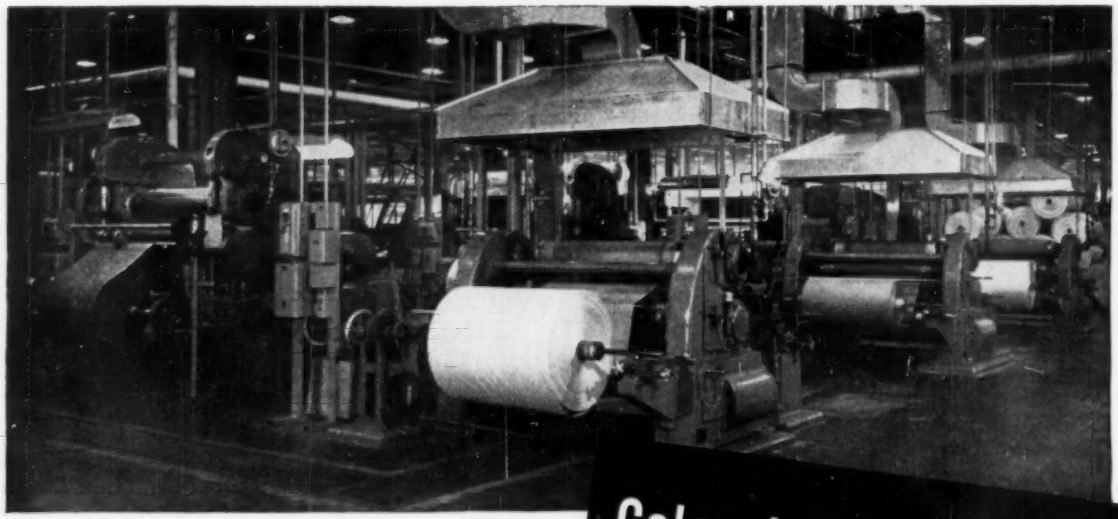
. . . have contributed immeasurably to the economic surge of the South! In 1956 alone, tufted carpeting, and other products worth over $267 million were shipped by Southeastern manufacturers to markets here and abroad. *To produce over 90% of the nation's tufted products,* these manufacturers used over 251 million pounds of yarn and fabric, most of which was produced in the South. • The growth of the tufted textile industry has added impetus to the growth and development of the area. And the Trust Company of Georgia, with a full and complete FACTORING DEPARTMENT, has been pleased to participate in this growth as FACTOR for numerous textile producers. If your operation requires this specialized service, contact us. The Trust Company will gladly work with you and your bank in Dixie's "Forward March of Progress."

FACTORING DEPARTMENT

TRUST COMPANY OF GEORGIA
ATLANTA

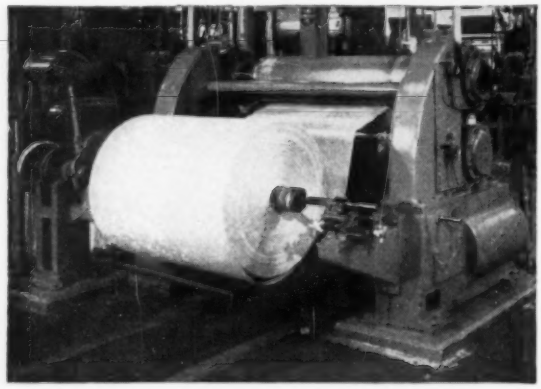
Next door to every Mill in the South

For more data, circle A-33 on Reader Service Card

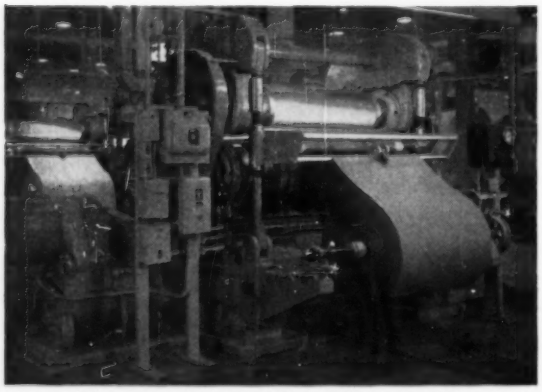


View of finishing operation at The Springs Cotton Mills, Grace Bleachery Division showing Appleton Machine Company 20 Ton Embossers and 50 Ton Schreiner Calenders.

Colonel Elliott Springs Chooses Appleton



One of three Appleton 20 Ton Embossers in use at The Springs Cotton Mills, Grace Bleachery Division.



One of three Appleton 50 Ton Schreiner Calenders specially adapted for everglaze finishes at Springs Cotton Mills, Grace Bleachery Division.

The uncommon elegance of Springmaid sheets can be attributed to Colonel Elliott Springs' shrewd judgment of textile machinery.

According to a trade journal article, the famous Springs Cotton Mills owner demands equipment that meets these requirements:

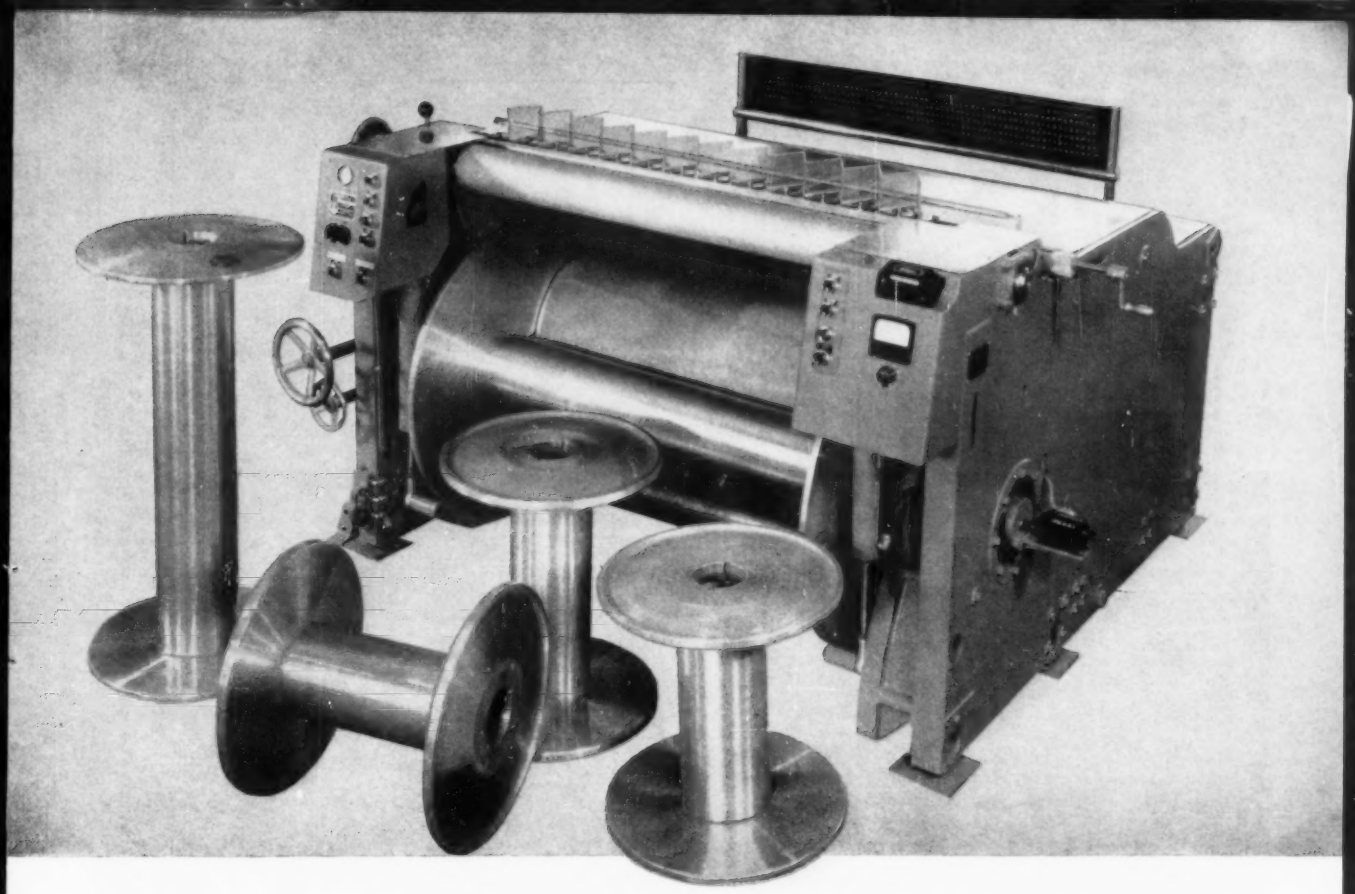
1—It must be modern.
2—It must be well made.
3—It must be the best available.

There never was a better time to invest in efficient equipment. If you would like to own the finest embossers or calenders in the industry, write or call an Appleton representative today. He will gladly analyze your needs, *without obligation.*

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

For more data, circle A-34 on Reader Service Card
For more data, circle A-35 on Reader Service Card →



Use any of these beams on this Versatile Warper

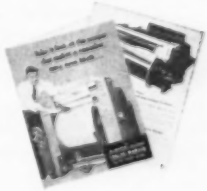
The versatile Kidde-Sipp Warper Model 149B is built to take a 50" beam, up to 32" in diameter—BUT it can quickly be converted to take a 42" beam, or even two 25's or two 21's.

If you don't need this flexibility, of course, you can get Model 149A. This warper can be furnished to accommodate either a 50" or a 42" beam.

Both models are dependable and sturdy, as are all Kidde-Sipp warpers.

Here are some other features of Kidde-Sipp Model 149 Warpers:

- Speed range is 8 to 1 (75 to 600 YPM).
- Electric brakes have independent rheostats for synchronized stops.
- Pressure roller and diversion roller are synchronized by a timing belt.
- You can choose either a fan reed or a positive expansion reed.
- Hydraulic action makes beam doffing work a girl can do single-handed.
- Beam tape attachment helps keep ends set in position.
- You get predetermined revolution and yardage counters.

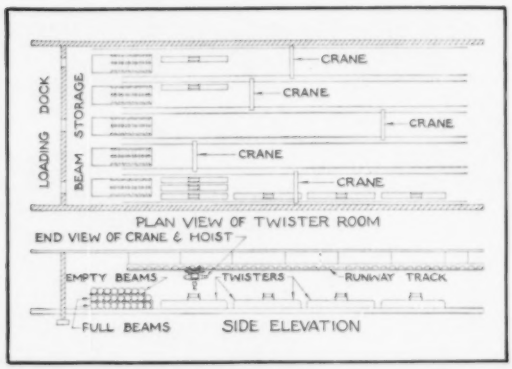
The Model 149 is part of a line of dependable Kidde-Sipp Warpers. We'll be happy to supply you with detailed folders, which describe every warper we have. Write to Kidde Textile Machinery Corp., Bloomfield, N. J. Or phone Mr. Ruddick at PIlgrim 8-8100 in Bloomfield.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

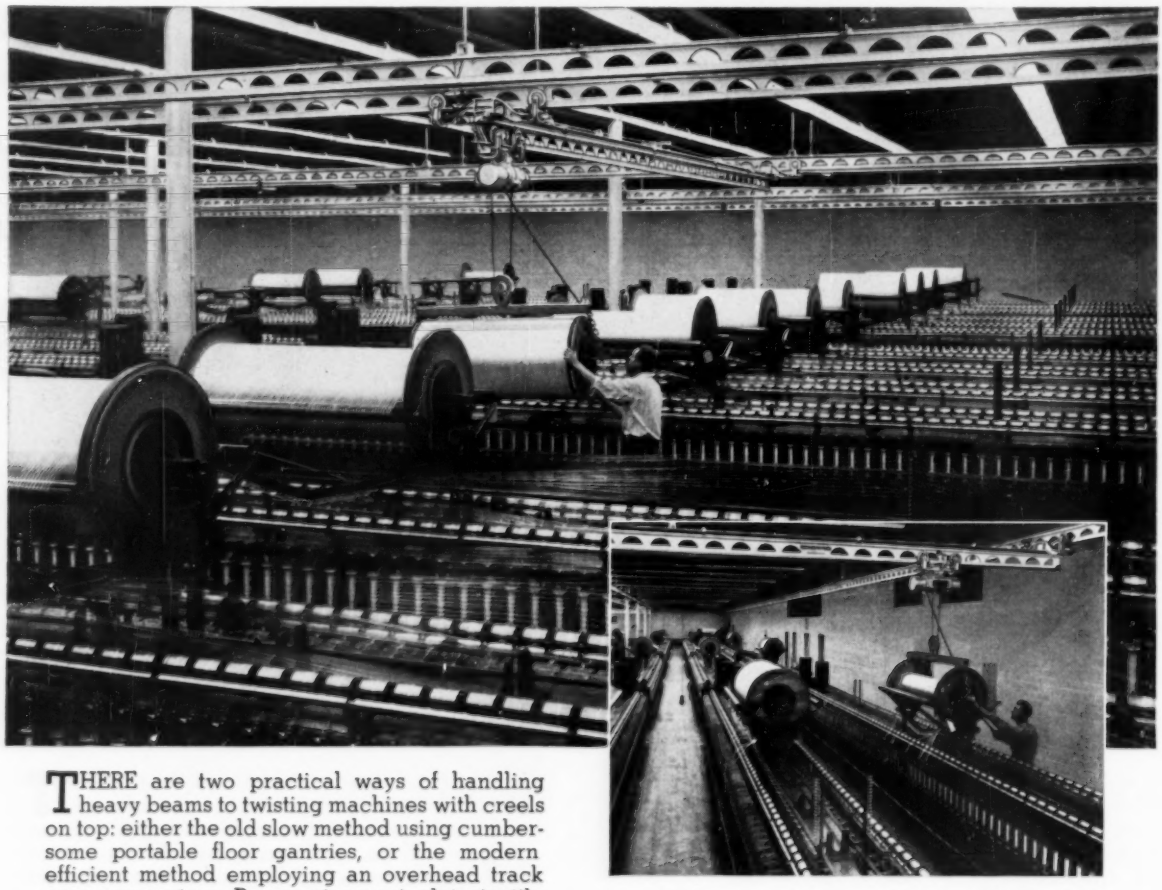
Kidde TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Handling 36" Beams to Twisting Machines

Easy rolling hand-propelled Tramrail cranes with electric hoists of one ton capacity provide complete handling service for the entire twister room and at railroad dock and in beam storage. Beams are up to 36" diameter by 58" long.





THERE are two practical ways of handling heavy beams to twisting machines with creels on top: either the old slow method using cumbersome portable floor gantries, or the modern efficient method employing an overhead track or crane system. Progressive up-to-date textile mills have found the latter method so advantageous that overhead handling equipment has been specified for twister rooms in nearly every recent plant built for this purpose.

In the ultra-modern twister room of a prominent Southern mill, a Cleveland Tramrail system handles 36" diameter rayon beams from railroad dock to storage, thence to twisting machines. Empty beams are returned on the same equipment.

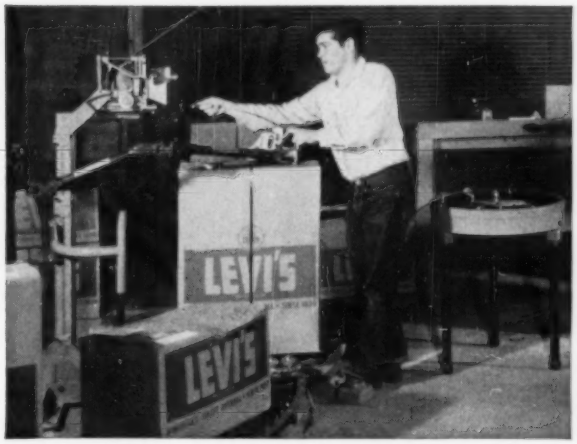
It is a simple easy task for a man without previous experience with Tramrail equipment to convey a beam and set it in position on a twisting machine. Where required two or more beams can be mounted on a twister frame with equal ease. Tramrail equipment eliminates the need of floor trucks entirely, as it transports the beams directly from storage to twisters without rehandling. By handling beams, and all other materials overhead, the chief source of floor wear and damage is eliminated.

Write for free Engineering and Application Booklet No. 2008. Packed with valuable information.

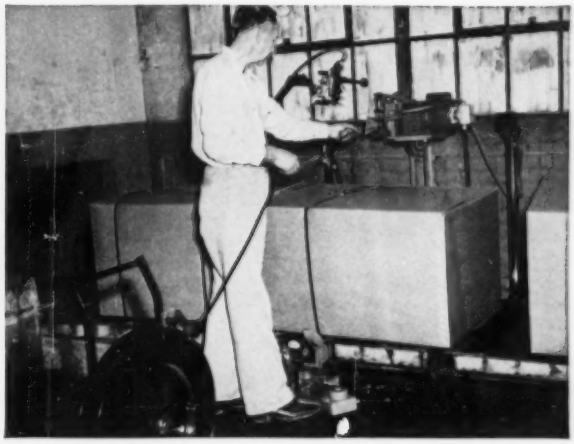
CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

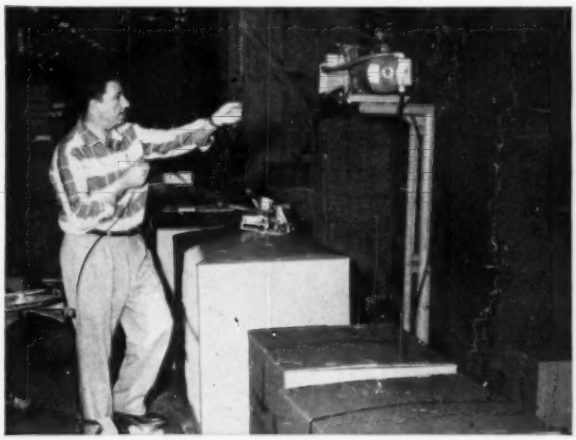
CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 8465 E. 287 ST. • WICKLIFFE, OHIO



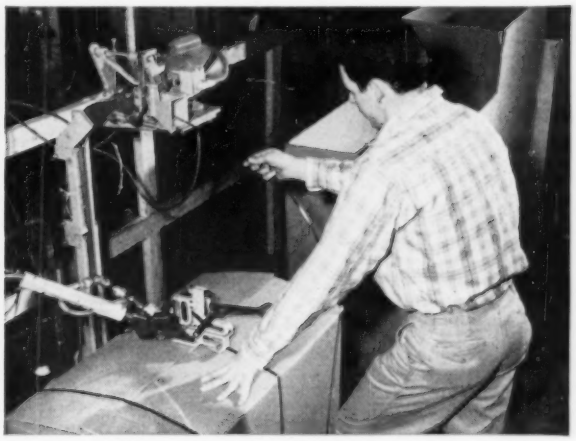
TROUSERS—One man works two conveyorized strapping stations...easily straps and weighs 440 cartons of various sizes per day, using Signode power strap feeders and Model A hand operated strapping tools. Production increased, and savings of 55% reported.



THREAD AND YARN—One man easily straps 300 cartons per day, four straps per carton, with a Signode power strap feeder and a Model AP air powered strapping tool. Operator has time for other duties. Two men were formerly assigned to carton strapping.



CHENILLES—One man straps 400 cartons per day. Cartons vary widely in size and weight. The operator has time for other duties, although two men formerly were needed. Signode power strap feeder and a Signode Model A tool are used.



FINISHED PRINT GOODS—One man straps 500 cartons a day, three straps per carton, using a Signode power strap feeder and a Model AP air powered strapping tool. Cartons vary greatly in size. Production has been more than doubled.

New low cost Signode power strap feeder a real money saver on textile packages

The power strap feeder is an independent, motorized, foot-pedal operated device for putting strap around big packages. It saves walking around...saves standing around...saves enough to pay for itself in short order. For more information, call the Signode man near you, or write to Signode for "Power Strap Feeder" folder.

SIGNODE

First in steel strapping

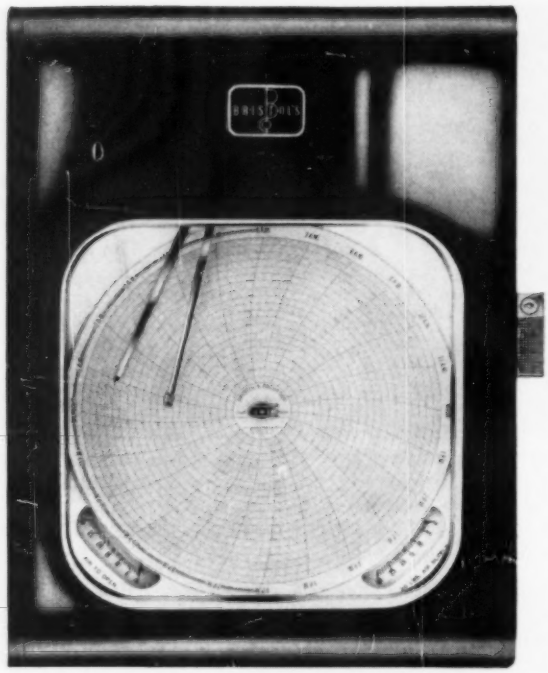
SIGNODE STEEL STRAPPING CO.

2642 N. Western Avenue, Chicago 47, Illinois

Textile specialists in Atlanta, Greenville, Charlotte, Birmingham, Richmond, Nashville, Chattanooga

In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

For more data, circle A-37 on Reader Service Card



Your newest man can operate and maintain this controller

He'll catch on quick to the Bristol Series 500 Controller without a complicated, lengthy training period.

In fact, your plant can have Bristol Series 500 Controllers, even if you don't have a formal instrument department at all. Many small instrument users are doing this today. Yet the 500's performance is such that one of the largest, most widely known chemical companies in the country just bought seventy 500's for its exacting processes.

Here are the big reasons the 500's a favorite with all instrument users, both large and small: (1) Basic simplicity of the operating mechanism; (2) Bristol measuring elements insure the utmost accuracy.

Another big simplification: You can exactly calibrate the Series 500 Controller with only one single adjustment, even after complete disassembly and reassembly with replacement of parts.

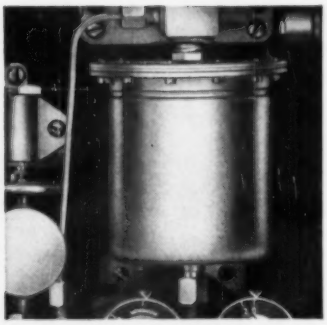
Get complete data on Bristol Series 500 Pneumatic Controllers now, before you order another instrument. Write for bulletin A 130, The Bristol Company, 103 Bristol Road, Waterbury 20, Conn. E-19

Several hundred standard models meet every process requirement including:

These problems:	These operating modes:
1. Cascaded control	1. Fixed narrow band (on-off)
2. Selective control	2. Proportional—to 100% and to 30%
3. Ratio control	3. Reset with wide band—to 400%
4. Time program control	4. Derivative (rate)
5. Pneumatic Transmission	5. Reset plus derivative

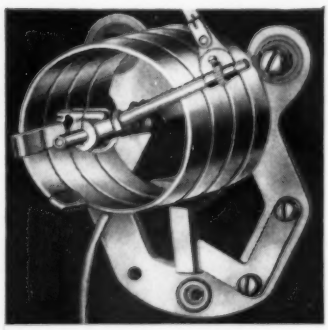
BRISTOL TRAIL-BLAZERS IN PROCESS AUTOMATION

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

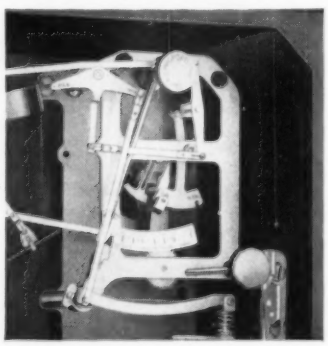


Reset Action Stops (in cylinder), another Bristol exclusive on reset models.

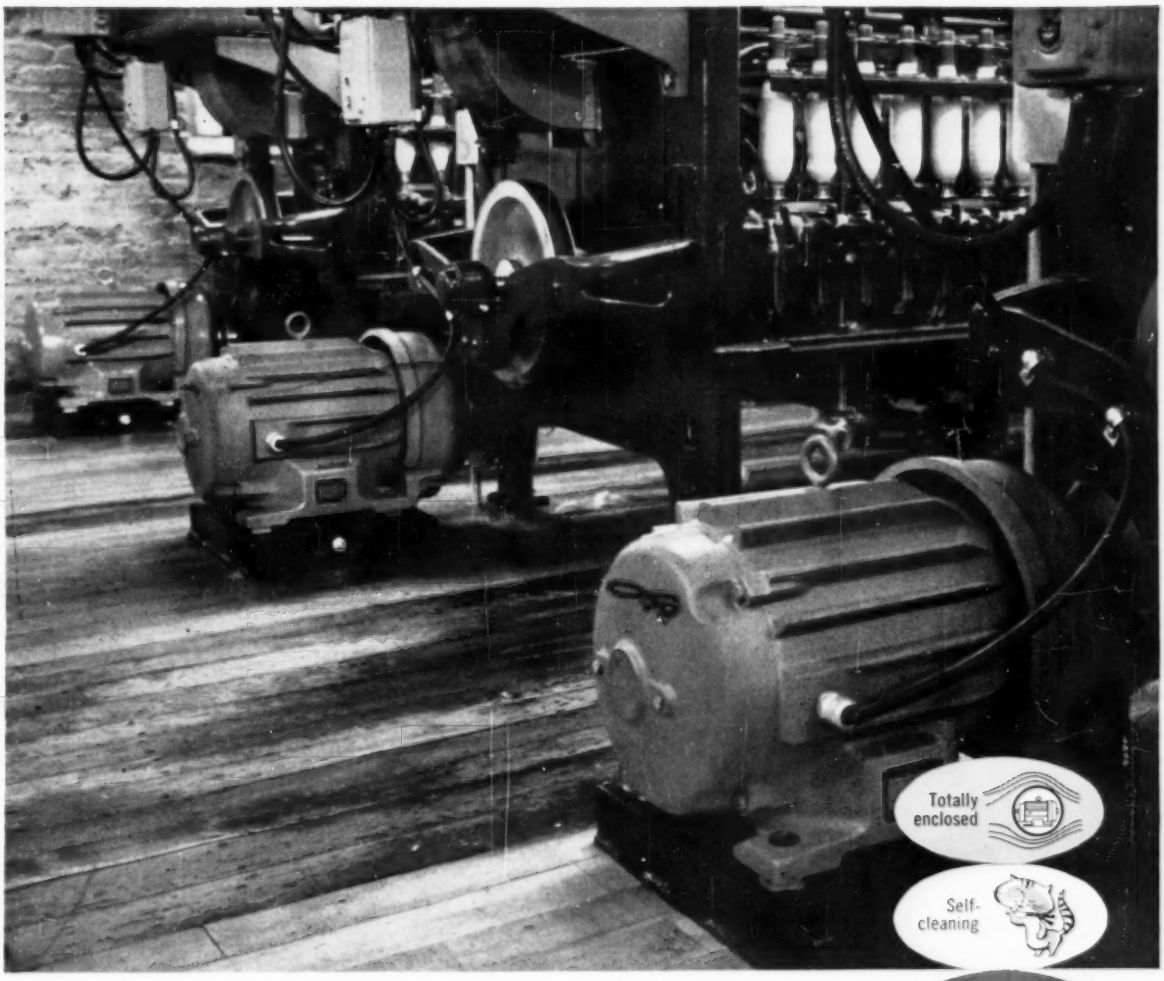
Zero Derivative Setting, exclusive with Bristol on derivative models.



Precision Bristol Measuring Elements insure accuracy.



Built-in Calibration assures permanent accuracy of controller action.



"Seconds" reduced with self-cleaning motor

New Louis Allis textile motor runs cooler, reduces lint pile-up, won't dry out ends

The new Louis Allis "Clean-Flo" textile motor is specifically designed to meet your mill requirements. "Clean-Flo" is totally enclosed — lint absolutely can't contact the inside of the motor.

"Clean-Flo" is cooler running than other motors, too. It's designed to mount a fan several sizes larger than normal to blow considerably more air across the motor. That means fewer cooling ribs are needed, so there are none on the bottom of the motor, and a further chance of lint pile-up is eliminated.

The big fan on the shaft extension end holds down any heat build-up, and limits the transfer of heat to the spinning frame. The motors pictured above are mounted to blow lint away from the driven machine so that spindles will not dry out.

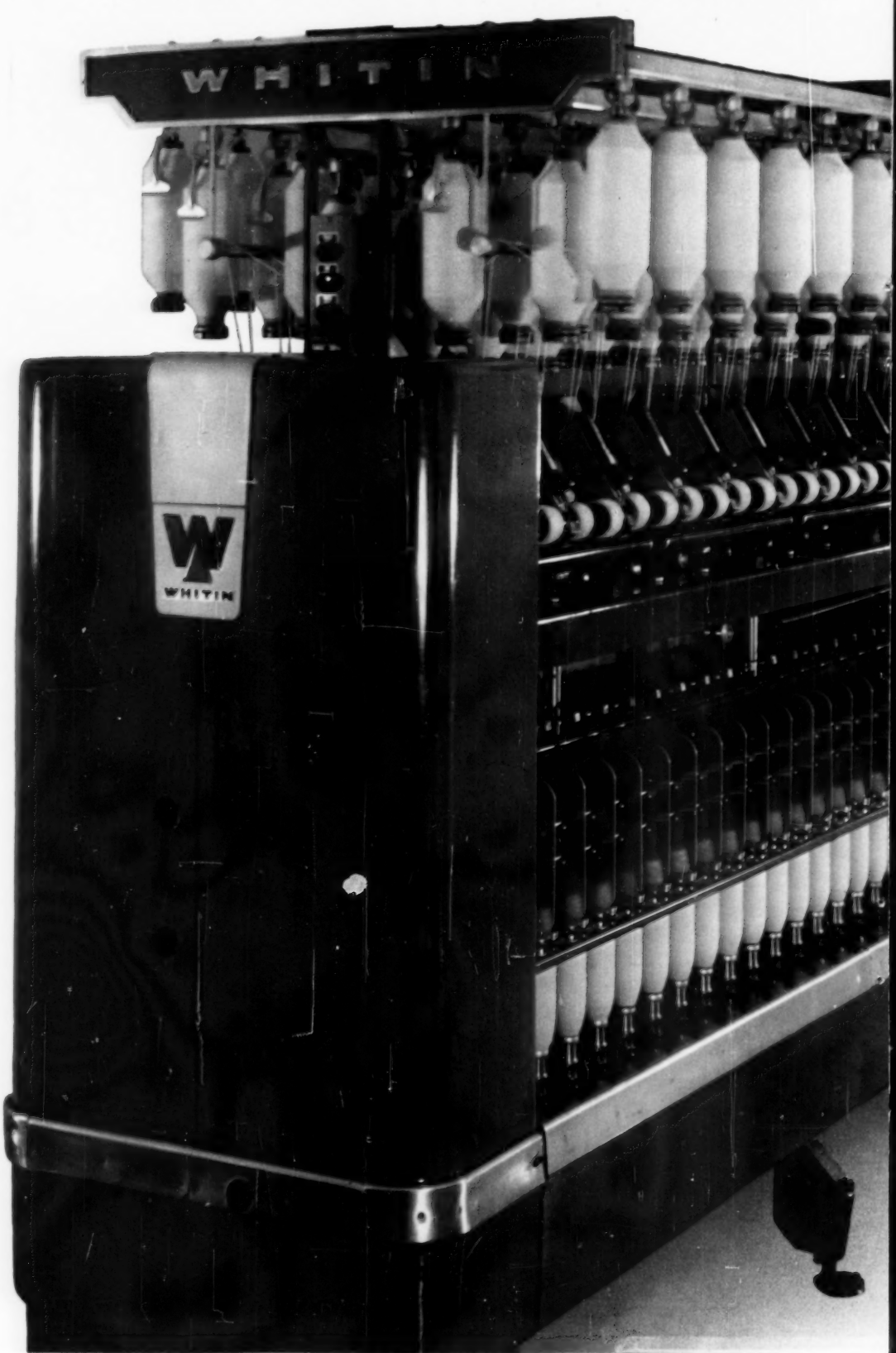
The "Clean-Flo" is also available with "soft-start" characteristics needed in roving so that ends won't break. It's a built in feature — no extra control mechanism is needed to get the easy start.

Write for Bulletin 1850, "Clean-Flo Textile Motors" to your Louis Allis District Office, or The Louis Allis Co., 443 E. Stewart St., Milwaukee 1, Wisconsin.

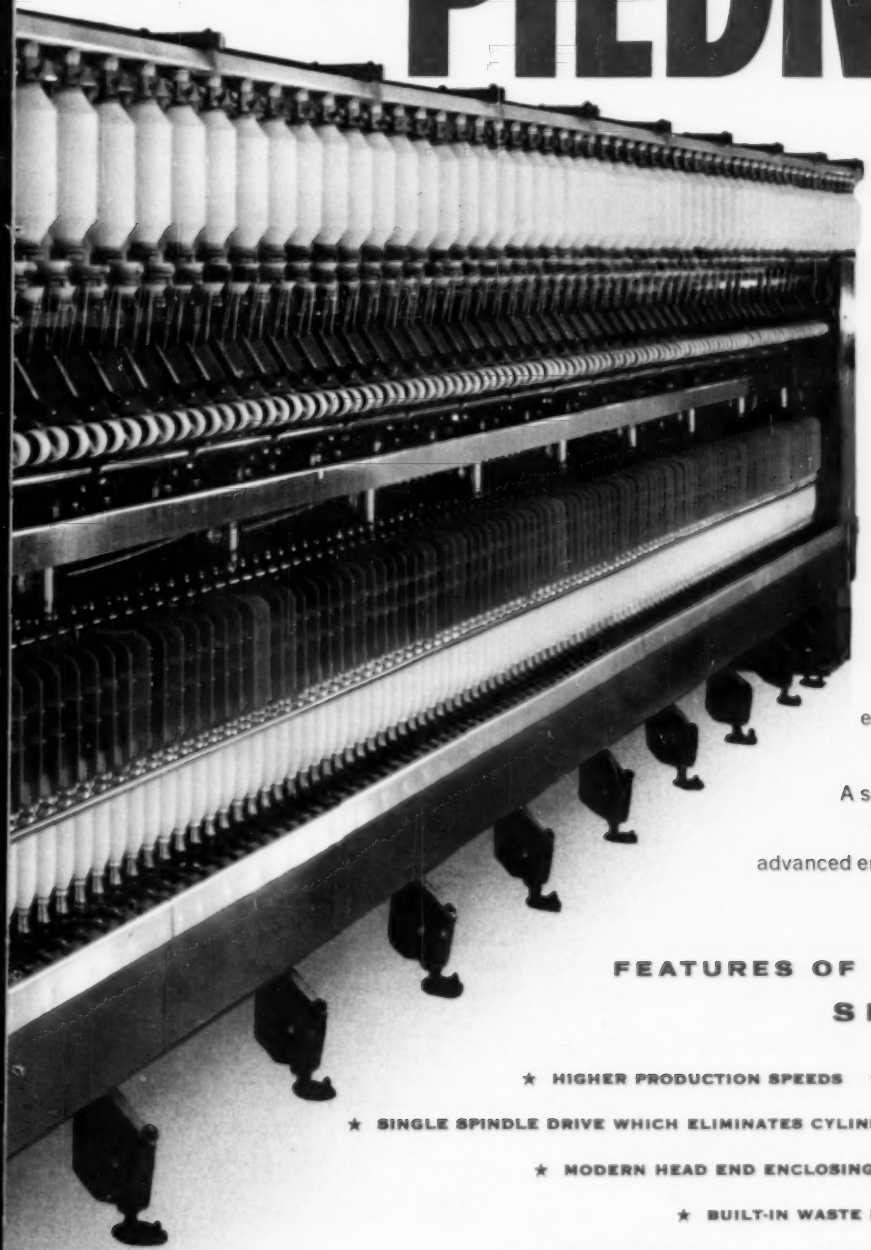
LOUIS ALLIS

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES

The World's Most Advanced



Spinning Frame . . the WHITIN PIEDMONT



Whitin made this claim for the new Whitin PIEDMONT Spinning frame—even while it was in its development stages and still under wraps.

During its first public showings at the Southern Textile Exposition in Greenville, S. C. and at the International Textile Machinery Exhibition in Manchester, England, thousands of textile experts and mill men from all over the world were quick to agree with the validity of our claims. Their complete and enthusiastic endorsement of the PIEDMONT exceeded our most optimistic expectations.

A score of new and exciting features created the indelible impression of smart design, advanced engineering and outstanding performance.

FEATURES OF THE NEW PIEDMONT SPINNING FRAME

★ HIGHER PRODUCTION SPEEDS ★ SCIENTIFIC BALLOON CONTROL RINGS

★ SINGLE SPINDLE DRIVE WHICH ELIMINATES CYLINDER, TAPES AND TAPE TENSION PULLEYS

★ MODERN HEAD END ENCLOSING NEW GEARING AND IMPROVED BUILDER

★ BUILT-IN WASTE REMOVAL AND MOTOR HEAT DISSIPATION

★ SIMPLIFIED CLEANING ★ PRECISION CONSTRUCTION ★ MODERN STYLING

WHITIN MACHINE WORKS WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

The Look of ***Luxury***

is not an accident when **d-2 LESTOIL** *perfects pre-finishing processes*

Fabric by
William Skinner & Sons
McCalls pattern No. 4257

UNIFORM bleaching and dyeing are assured when fabrics are thoroughly cleaned of all grease, oil, graphite, natural wax, and other soil. d-2 LESTOIL can accomplish this cleanliness, and — in addition, perfect dye preparation.

d-2 LESTOIL makes materials soft and pliable gives them that "fine hand" that designers look for in quality fabrics.

d-2 LESTOIL emulsifies and disperses all types of soil. It is also an excellent wetting and penetrating agent. It prevents redeposition of foreign matter in the fabric because it accomplishes perfect rinsing. Material cleaned with d-2 LESTOIL is so free of soil that fabrics bleach out to a uniform whiteness — or dye to a scintillating brightness.

The process use of d-2 LESTOIL requires no change in your scouring or bleaching equipment.

d-2 LESTOIL may be safely used full strength for spotting (acetates and rayons require padding). Material may be left standing for any length of time with no damage to fibres.

Send for complete technical information and a generous free sample of d-2 LESTOIL. See how d-2 LESTOIL gives fabrics the finest look — that "look of luxury" so in demand today!

Liquid **LESTOIL** Detergents

Adell Chemical Co.

HOLYOKE, MASSACHUSETTS

For more data, circle A-41 on Reader Service Card

Textile World DECEMBER, 1958

New Dye Carrier for Hydrophobic Fibers—

Polyester and triacetate fibers dye more rapidly to deeper shades if a new carrier developed in England is added to the dyebath.

The carrier is based on a 50-50 mixture of dimethyl terephthalate and benzanilide, although other proportions may be used. The product is a dry powder that, because of the benzanilide, is soluble in water.

The dyebath is made up with 0.2% of the carrier plus a small amount of a dispersing agent such as a fatty-alcohol sulfate.

Mixtures of polyester and polyamide fibers can be dyed to union shades in the presence of the carrier if a selected anionic nylon dye is added to the bath at the start of the dyeing. In mixed-fiber dyeing of this type, the carrier will cause the polyester fiber to dye much deeper than the polyamide fiber if only disperse dyes are used.

New Starch Doesn't Jell—

A modified corn starch, called cross-linked dicarboxyl starch, has the property of making useful pastes that do not jell on cooling, even at extremely high viscosities.

Developed by the USDA's Northern Utilization Research and Development Div., Peoria, Ill., the starch is first cross-linked and then treated so that the final product is acidic. Acidification increases the ability of the starch to absorb water and swell when heated, while the cross-links prevent jelling. Possible uses of the new starch include textile manufacturing.

Chitosan Makes Pigment Binder—

Chitosan, prepared by hydrolysis of the acetamido groups in chitin, shows considerable promise as a binder for phthalocyanine pigments in printing. The product acts as a thickener as well as a pigment builder, and pastes are easy to prepare and last indefinitely. Prints made with chitosan as a binder are fast to washing and rubbing.

The basic reaction for preparing chitosan is—

$$C_{32}H_{54}O_{21}N_4 + 2H_2O \rightarrow C_{28}H_{50}O_{19}N_4 + 2CH_3 \cdot COOH$$

Causes of Unlevel Dyeing in Woolens—

Heavily milled velour qualities of woolens often show unlevel or streaky dyeing. In a study made by F. J. Parker, the primary causes of unlevel dyeing were found to be the type of dyestuff used and the mechanical abrasion the goods receive in scouring after milling and before dyeing.

The dyes that tend to show up the effects of the mechanical abrasion

are principally the anthraquinone acid blues and violets. Triphenylmethane greens and blues and the metal-complex dyes applied with a high percentage of acid do not produce unlevel results.

It was found that by tacking the goods face in, reducing washer speed, and driving both top and bottom rolls of the dolly washers, a perfectly dyed face and much improved back could be obtained with any of the dyes. Further confirmation of the bad effects of rope scouring in conventional dolly washers was evident in perfect dyeings made on goods that had been scoured in the open width.

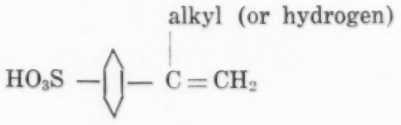
Additives Improve Fiber Dyeability—

Researchers are getting around the reluctance of hydrophobic fibers to absorb dyes by adding various materials to the primary mix before spinning.

For fibers of the polyester type, water and dyestuffs are much more freely absorbed by fibers that contain 10 to 20% of another glycol that has a benzene nucleus between its glycol hydroxyl groups.

Suitable glycols for the purpose are made by the dihydroxyethylation of hydroquinone, p, p'-dihydroxydiphenyl methane, or p, p'-dihydroxydiphenyl sulfone. These products improve dyeability without adversely affecting the strength, elongation, or other properties. The melting point of the modified fibers is depressed 26° C. with dihydroxyethylated hydroquinone, and 15° C. with dihydroxyethylated p, p'-dihydroxydiphenyl methane.

The range of dyes that are acceptable to acrylic fibers is increased by the addition of 5 to 10% of an alkanyl benzene sulfonate of the general formula:



which may be optionally alkylated and/or halogenated with chlorine or bromine.

Suitable additive compounds include styrene p-sulfonic acid, vinyl toluene p-sulfonic acid, and o-chlorostyrene p-sulfonic acid.

According to British Patent 801,420, fibers made from 94% acrylonitrile and 6% of styrene p-sulfonic acid will absorb 75, 69, and 79 units respectively of disperse, basic, and vat dyes. Fibers made from 100% polyacrylonitrile fibers absorb only 37, 38, and 0 units of such dyes, in the same order.

Normal dyeing procedures without pressure or carriers are satisfactory, and the usual fastness properties of the dyes can be expected.

Static Problems Reduced—

Man-made fibers, inherently plagued by trouble from static during processing and use, have been improved in this respect by recent efforts of British and German scientists.

The usual electrical resistance of 1.0×10^{12} (or 10^{13}) ohms has been reduced to something like 0.1×10^{9} ohms by chemical treatment.

Methane and ethane derivatives that are able to yield free trivalent car-

TEXTILE

bon radicals are responsible for the improvement in static reduction.

It was first discovered that substances such as triphenyl chloromethane, triphenyl carbinol, diphenyl monodiphenyl methane, diphenyl a-naphthyl methane, diphenyl tetradiphenyl ethane, and hexaphenyl ethane are effective static-reducing agents if they are added to the monomers before polymerization to form a fiber.

More recently, it has been found that these substances dissolved in a-chloronaphthalene and 1:2.4-trichlorobenzene, can produce the same effect if they are added to the polymer just prior to spinning. About 5% of the derivatives is necessary. The free radicals cannot be washed out of the polymers; so the antistatic effect is permanent.

Silicone Oils Help Nylon Heat-Treating—

Long horizontal baths of molten metal that are used to heat-treat nylon cords and yarns are protected from surface oxidation by floating a thin film of a high-boiling silicone oil on the surface (British Patent 796,363).

The process of reducing extensibility and shrinkage of nylon cords that may be used at temperatures up to 150° C. consists of passing the cords through a bath of Wood's metal (50% Bi, 25% Pb, 12½% Sn, and 12½% Cd) maintained at 160 to 240° C. according to the desired end results. Horizontal baths are preferred because it is easier to apply uniform tension to the yarns being treated.

Research Improves Knowledge of Wool—

Australian Wool Textile Research Laboratories workers have devised a method for removing and analyzing wool scales to determine the effects of various shrinkproofing processes on the surface layers of wool fibers.

The analyses show that the scales of untreated wool contain less glutamic acid and aspartic acid and more proline than the rest of the fiber. This difference in makeup may account for the reactivity of the scales compared with the cortex of the fiber.

In the same laboratories, attempts to stabilize wool against biological and chemical attack have so far had only partial success by treating the fiber with carbo-diimides to introduce new peptide cross-links.

Did You Know . . .

. . . that while soap or detergents don't affect cottons chemically after many launderings, oxidizing bleaches progressively increase cupra-ammonium fluidities? Chlorine-containing bleaches are most damaging, sodium perborate is next, and hydrogen peroxide causes the least chemical damage.

•

. . . that beige, the nation's top consumer color in 1958, will maintain its position as the color leader in 1959? For the last three years, the color shift has been to subdued tones of rose, brown, and gold, at the expense of the vivid colors that held sway prior to 1956. Next year's top 10 colors will be beige, sandalwood, pink, oyster white, light green, turquoise, light blue,

THE UNIQUE BRILLIANCE, FAST-
NESS AND PROVEN VERSATIL-

yellow, light gray, and rose, according to a consumer color analysis by Monsanto Chemical Co. (For a summary of the color report, circle F-25 on the Reader Service Card on p. 169.)

NEW DYES AND CHEMICALS

Acid Dye

Cibalan Brilliant Scarlet RL . . . produces a yellowish-red shade on wool, nylon, or silk that has improved fastness qualities in its brightness range.

The color withstands 60 to 100 hours Fade-Ometer exposure in light or medium shades; and resistance to crocking and perspiration and fastness to washing are considered good.

The dye may be applied to wool before carbonizing or fulling, and also to nylon raw stock.

Dyeings on wool and nylon produce good unions, and the dye can be printed direct or by Vigoreux methods. Ciba Co., Inc., Box 25, Village Station, New York 14, N. Y.

Circle D-1 on Reader-Service Card

Thermosetting Resin

Zeset MC . . . imparts crease resistance and dimensional stability to cotton and rayon fabrics.

The product has been especially developed for wash-and-wear finishes and is resistant to chlorine retention. Softeners or bodying agents may be added to the resin bath to modify the hand of treated fabrics. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-2 on Reader-Service Card

Reactive Dye

Cibacron Brilliant Red B . . . is a level-dyeing color that produces fast medium-red shades of exceptional brilliance. The dye is suitable for cellulosic fibers or wool and has good light- and wetfastness, particularly when the goods are not subsequently subjected to chlorine treatments. Dyeings and prints are stable to most resins and coatings if the latter are applied with consideration for their possible effect on lightfastness of the color. Ciba Co., Inc., Box 25, Village Station, New York 14, N. Y.

Circle D-3 on Reader-Service Card

Vat Dye

Calcoloid Gray 2BC . . . dyes cellulosic fibers neutral gray shades of excellent all-around fastness.

The product is offered as a double paste that is suitable for application by all conventional methods. American Cyanamid Co., Dyes Dept., Bound Brook, N. J.

Circle D-4 on Reader-Service Card

Nonionic Softener

Lauravel SC . . . produces a full, soft hand on cotton yarns or fabrics and does not alter shades or yellow whites.

The product is resistant to salts, acids, alkalis, and acid-chrome finishing baths. The softener is compatible with resins and dextrines and is easily applied by conventional methods. Laurel Soap Mfg. Co., Inc., Tioga, Thompson, and Almond Sts., Philadelphia 34, Pa.

Circle D-5 on Reader-Service Card

Acid Dye

Cibalan Black 2BL . . . dyes wool, silk, or nylon bloomy bluish-black shades that have exceptionally good lightfastness. The color is suggested for household and apparel fabrics and may be applied to stock, yarn, or piece goods.

Fastness to perspiration, acid chlorination, nylon heat-setting, milling, carbonizing, and fulling are good.

The color may be dyed from a neutral bath or from an acid bath with Cibalan Salt S. Union shades can be obtained with wool-silk or wool-nylon blends. Ciba Co., Inc., Box 25, Village Station, New York 14, N. Y.

Circle D-6 on Reader-Service Card

Vinyl-Butadiene Latex

Dow Latex 2582 . . . is based on vinyltoluene and butadiene and is especially suited to textile applications.

Suggested for rug and upholstery backings, the elastomer has good resistance to light and metal staining and is low in odor. Dow Chemical Co., Midland, Mich.

Circle D-7 on Reader-Service Card

Vat Dye

Sandothrene Brown N3B Double Paste Ultrasperse . . . is particularly suitable for use on cottons that are to be resin finished. The dye does not change shade in resin finishing and has excellent lightfastness and improved freedom from tendering.

The color is also suggested for awning goods and package dyeing and can be printed by flash-ageing methods. Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y.

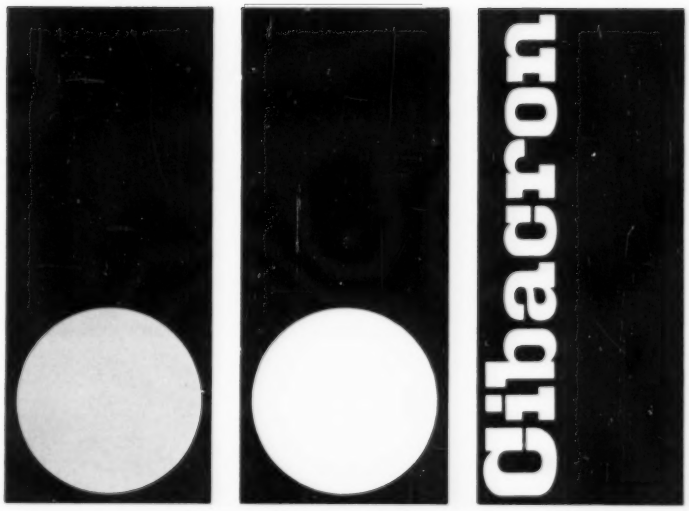
Circle D-8 on Reader-Service Card

Ultraviolet-Light Absorber

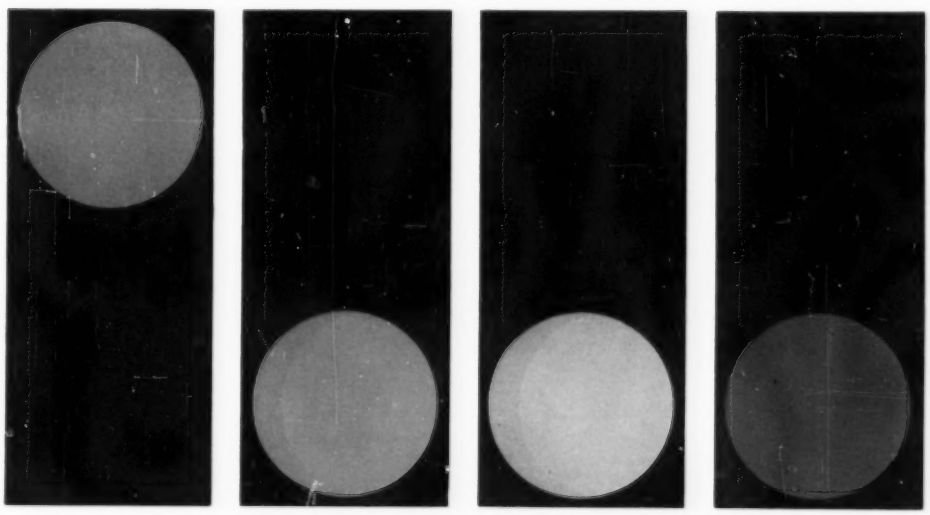
Cyasorb UV24 . . . applied to plastic screens or included in lacquers, varnishes, or textile coatings effectively absorbs ultraviolet light that causes fiber degradation or color fading. American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y.

Circle D-9 on Reader-Service Card

For more data, circle A-42 on Reader Service Card →



THE UNIQUE BRILLIANCE, FASTNESS AND PROVEN VERSATILITY OF CIBACRON® DYES for printing and dyeing on all cellulosic fibers have won immediate recognition and a permanent place for these original fiber-reactive dyes. An almost unlimited range of brilliant shades can be matched in clean, sharp prints and dyeings. Color yield is high, and high-speed equipment can be used. In bringing a new kind of beauty to modern printing and dyeing, the CIBACRON Dyes do not require complicated or expensive application methods but rather adapt readily to standard print shop and dyehouse procedures. On wool, too, the CIBACRON Dyes can be used to produce a combination of brilliance and fastness while retaining the fullness and softness of the wool fiber by the simple addition of NEOVADINE®AN to conventional wool dyeing formulae.



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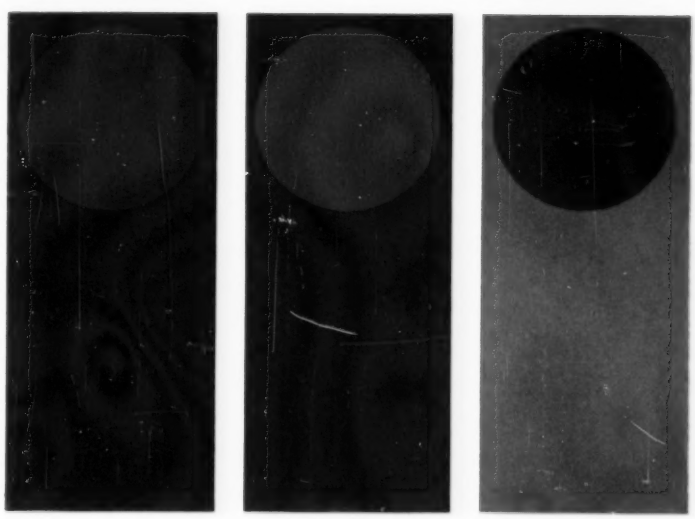

"When it comes to rug backings," says Mr. M. Mead of Roxbury Carpet Company, Saxonville, Massachusetts, "we need more than a dependable source of supply. We need facts . . . facts about new polymers, new processes that can help us to maintain our high standards of quality.

"That's what the General Latex 'facts service' provides. Their people keep us informed at all times on new developments — save us time, trouble and money."

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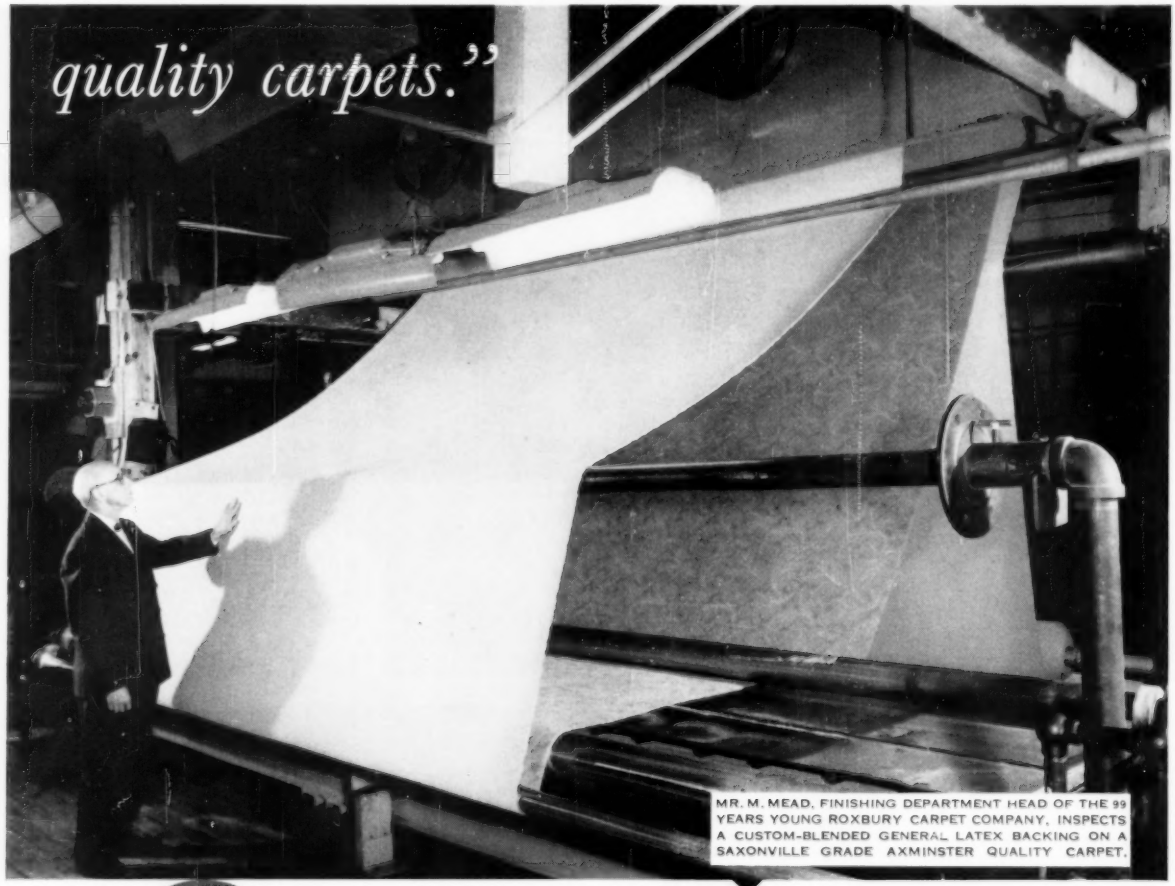
"General Latex 'facts service' helps us sell quality carpets."



MR. M. MEAD, FINISHING DEPARTMENT HEAD OF THE 99 YEARS YOUNG ROXBURY CARPET COMPANY, INSPECTS A CUSTOM-BLENDED GENERAL LATEX BACKING ON A SAXONVILLE GRADE AXMINSTER QUALITY CARPET.

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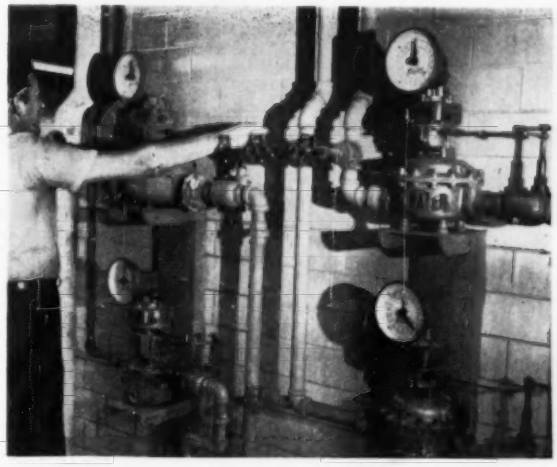
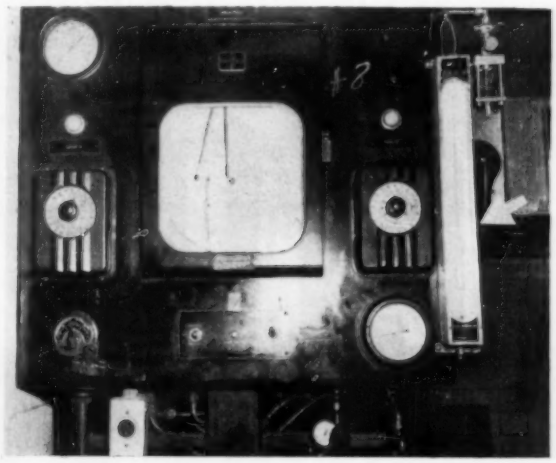


AUTOMATIC METERS deliver preset quantities of hot or cold water, brine, or caustic to the dyebath.



LIQUID LEVEL in mixing tank above is indicated on this gauge (arrow) mounted on control panel.

Metering DYEHOUSE LIQUORS Gives Better Control of Processing

American & Efird's Thread Plant at Mt. Holly, N. C., recently installed automatic meters on its hot-water, cold-water, brine, and caustic supply lines. Results are—

- **Accurately dispensed materials at reduced labor cost**
- **Fewer accidents from caustic handling**
- **Less waste**

BY PIPING AND METERING four prime ingredients used in its package-dyeing operation, American & Efird Mills, Inc., has much better control of processing.

When the new dyehouse was set up, all dye- and chemical-mixing operations were put on a mezzanine floor completely separate from the dyehouse proper. A separate ventilation system insures a clean, color-free atmosphere for the dyehouse.

The dye-mixing tanks are served with hot and cold water, brine, and caustic soda put through Rockwell Empire meters that facilitate accurate control of dye formulas. Because only the exact amounts specified in the formulas are delivered by the meters, there is also less waste.

Another advantage is that the injuries that accompany handling caustic soda by the bucket are eliminated.

How the Meters Work

When the dyer sends his formula to the color shop, the color mixer sets the meter for the required amount of hot water, cold water, salt, or caustic that is to be delivered to the mixing tank.

When the operator opens the plug valve at the mixing tank, the meter delivers the specified quantity of liquor and then shuts off the line.

The mix flows by gravity to the package-dyeing machine below. Another control factor is provided at this point in the form of a gauge that tells the dyeing-machine operator how much of the mix has been transferred to the dyeing machine. This information is important because in many instances a charge of chemicals should be fed to the dyeing machine over a definite period of time. With the supply tank on another floor, the operator was reduced to guessing at the rate of flow of dyes or chemicals.

The problem was overcome by installing a liquid-level detecting and indicating system on each dyeing machine.

The indicator is actuated by hydrostatic pressure and is mounted at the control panel of the dyeing machine.

By glancing at the level of the colored liquid in the indicator tube, the operator knows exactly what portion of the charge has been delivered to the dyeing machine at any given time. Guesswork has been eliminated from one more step in the dyeing process.

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Perhaps your need is for a latex to lock pile, prevent weave slippage, impart dimensional stability, strength and resilience...or to up-grade your product's quality and hand. Whatever your need, *think first of Naugatuck for Latex!*

With more than three decades of formulating experience, featuring continuous research and application assistance, Naugatuck is one of the most experienced and exacting suppliers of latex and ready-to-use latex compounds to the textile industry. You can be sure of the care, skill and know-how that provides quality and uniformity in every Naugatuck latex. They are all available to *you* through any of the District Offices listed below.

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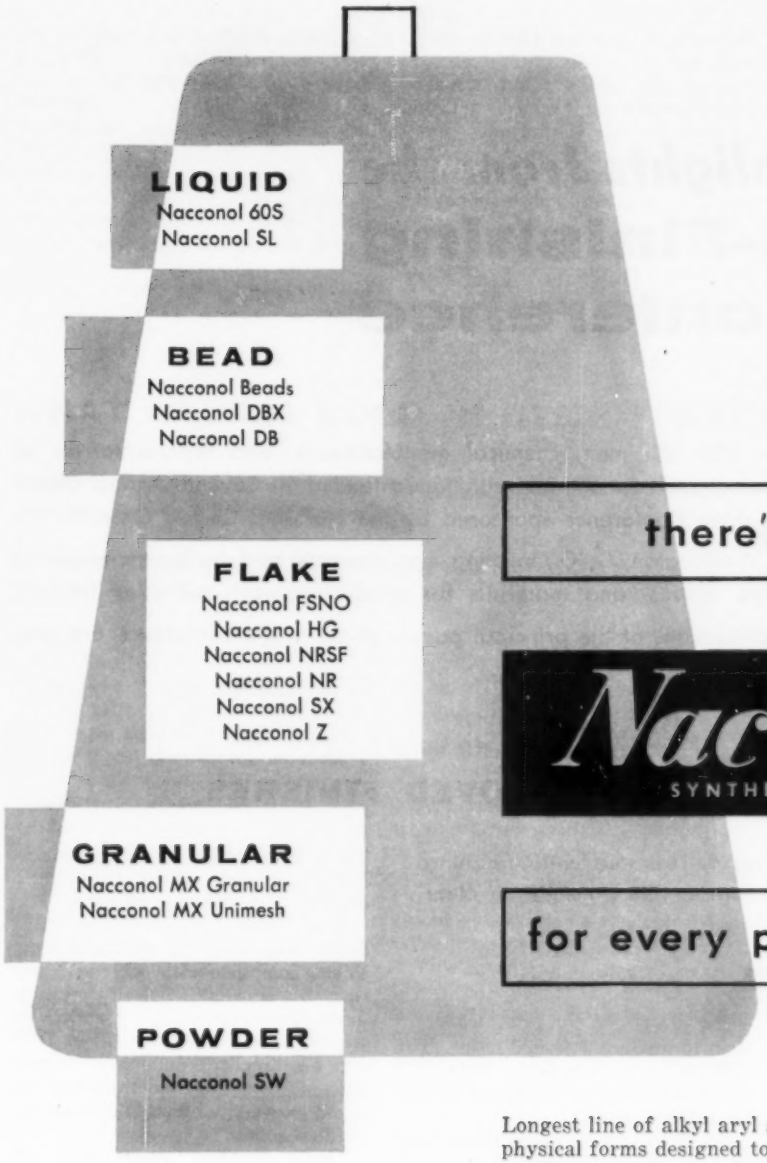

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For more data, circle A-45 on Reader Service Card

Highlights from the Chemical-Finishing Conference

- Over 350 mill men, chemical manufacturers, and representatives of government and educational institutions attended the Seventh Annual Chemical-Finishing Conference sponsored by the National Cotton Council.
- The Washington, D. C., meeting was characterized by heavy emphasis on ways, means, and materials for producing wash-and-wear finishes.
- Condensations of the principal papers given at the conference are presented here.

BLEND EPOXY RESINS FOR IMPROVED FINISHES

- Most of the advantages of the epoxy resins as cottin-finishing agents can be retained in blends of epoxies with a number of other types of resin.

By D. D. GAGLIARDI and F. B. SHIPPEE, Gagliardi Research Corp.

Epoxy resins can be blended with selected aldehydes, acetals, formaldehyde-amino resins, hemiacetals, and polymeric materials such as silicones, polyethylene, polyacrylates, and epoxy-based plasticizers to produce new finishes for cotton fabrics.

The new finishes exhibit improved durability, resistance to chlorine absorption, good crease resistance, and dimensional stability. One of the better finishes has resulted from a blend of epoxy resins with dimethylol ethylene urea.

The principal advantages of the epoxy resins for cotton finishing include complete durability to laundering, complete resistance to chlorine, and an absence of amine or formaldehyde odors.

The major drawback has been the relatively high cost of epoxy resins as compared to UF or DMEU resins. The reasons for the high cost are more costly raw materials and higher molecular weights of the cured epoxy resins, which requires a greater amount of resin to produce a desired result. The difference is in the order of 300 to 400 for epoxy resins as compared to 146 for DMEU resins.

So 12 to 15% of epoxy resins must be used to get the same effect as 5% of applied solids of the DMEU type. It has been found that the properties of cellulosic fabrics are altered by crosslinking agents in direct relation to the number of moles of crosslinking agent applied regardless of the crosslinking agent used.

Other diepoxides can be developed that have a lower molecular weight, but they have certain disadvantages that eliminate them as practical materials for plant application.

Blends Improve Cost Picture

A large number of reactive materials was tested to see which of them would work best with the epoxy resins to reduce costs while retaining the good qualities of the epoxy resins.

Over a score of materials were considered for the purpose. Those selected were chosen for their practicability and their ability to produce durable wash-and-wear effects.

One useful blend includes 10% epoxy resin and 2% glutaraldehyde. When combined with other additives such as silicones, polyethylene, or oxidized soy-bean oil, this blend yields crease-recovery angles of 250 to 270° and has excellent durability. Higher percentages of glutaraldehyde improve crease recovery but tend to discolor the finished goods.

Other excellent results were obtained with blends of epoxy and DMEU resins, the most outstanding being a 50-50 mixture applied to give 10% solids.

Good results were also obtained with blends including 10% epoxy resin and 5% of methylated urea-, modified urea-, and methylated melamine-formaldehyde resins.

Trials with epoxy-triazone blends revealed that with proper catalysts, satisfactory wash-and-wear effects can be created but objectionable odors developed in the fabrics.

Other epoxy compounds such as certain Bis phenols were used as components in blends with DMEU resins at 10% solids. Used alone, the Bis phenols produced no creaseproofing; but on a 7% Bis phenol-3% DMEU resin blend, crease resistance

was very high and not to be accounted for by the 3% DMEU resin content. The finishes were durable to 20 home washings.

Chlorine resistance of the Bis phenol-DMEU blends was poor, which indicates that a specific reaction occurs with the soluble epoxies like Eponite 100 and DMEU that is not duplicated with the Bis phenol epoxides.

The trials with epoxy-DMEU blends showed that zinc fluoroborate gave the best results because few other common catalysts were able to cure both the epoxy resins and the DMEU resins. The normal catalysts that are used for epoxy resins in nontextile applications are entirely unsuitable for producing crease-resistant finishes on cotton.

The work done with the various reactants, epoxy resins, and a number of nitrogen-bearing resins showed that DMEU resins in combination with water-soluble epoxy resins produced results not otherwise obtainable with either resin alone. These include almost complete resistance to chlorine damage, high crease resistance, wash-and-wear performance, and durability to repeated launderings.

Further investigations with epoxy resins and precursors of epoxy resins such as epoxy alkenes and epichlorohydrin seem warranted.

WHAT CAUSES ODOR IN RESIN-FINISHED FABRICS?

• The mechanism of how fishy odors are produced in resin-finished goods is discussed in this paper.

By **ALBERT C. NEUSSLE, E. O. J. HEIGES, and R. A. OLNEY,**
Rohm & Haas Co.

The development of fishy odors in UF resin-treated fabrics appears to hinge upon the presence of ammonia, formaldehyde, and formic acid, or a salt of formic acid. If any of these are completely eliminated, no fishy odors will develop.

The formic-acid salt is the only one of these components that is subject to control and can be minimized by using fresh resin, avoiding certain other finishing agents, or deionizing the resin solution shortly before use.

High concentrations of catalyst often inhibit the production of fishy odors because the catalyst holds onto whatever trimethylamine may be produced. Zinc salts are particularly effective in this respect.

What Other Resins Do

Ethylene-urea finishes react somewhat differently. If ammonia is eliminated in the resin bath, fishy odor will not develop even in the presence of free formaldehyde and formates. On the other hand, if formates are absent and ammonia is present, fishy odors may develop.

This effect may be produced during the cure, where excess formaldehyde could oxidize to formates; or there may be a direct reaction of free formaldehyde with ammonia to produce trimethylamine. These theories are still unproved.

The newer triazone resins tend to produce fishy odors despite attempts to control the formate and ammonia content. The compounds formed are not necessarily trimethylamine but may be primary and secondary amines not readily detected by the Kraus distillation test. Fabrics that have been finished with these resins should be tested by smelling as well as by the Kraus test to confirm the presence of fishy odors.

Other Factors Affect Odor

Excessively high curing tempera tures tend to produce fishy odors with any type of nitrogen-bearing resin. High acidity does not appear to be a critical factor in producing amine odors.

There is no difference in the potential for fishy odors between cotton and rayon. All other things being equal, both fibers produced identical results.

NEW COMPOUNDS EXTEND USE OF ACETAL REACTANTS

• Acetals are relatively new materials for the production of wash-and-wear finishes on cottons. Improved compounds, developed from the original acetals, have better all–around properties

By **J. B. IRVINE, T. J. CRONIN, and J. H. DAVIDS,**
Quaker Chemical Co.

The acetal-reactant type of resins for wash-and-wear finishes for cottons is relatively new. During the past year, an improved type of modified glycol acetal has been developed that has improved crease-resistant properties.

As with earlier acetals, the new resin is chlorine safe and durable and cures easily. There is a slight increase in tensile-strength loss with this latest product as compared with the original resin based on glycol acetal. However, for equal crease resistance, the product does not cause more loss of strength than other thermosetting resins. As a guide, about 8% resin add-on produces satisfactory crease resistance with acceptable strength loss.

The acetals require less time to cure than most thermosetting resins, and cures also can be effected at lower temperatures in many cases. A suggested curing situation is 60 to 90 secs. at 310° F.

Acetal resins have less damaging effect than some others if curing conditions become severe as to length of time or higher temperatures.

Magnesium chloride is a satisfactory catalyst; but Catalyst RCL, a proprietary product of unknown composition, has been used with the new acetals at lower temperatures and shorter times than normal to produce excellent results. Overcuring has less drastic effect on tensile strength when this catalyst has been used.

The finishes produced with the modified glycol acetal are durable to

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Giving products that something extra is, and has always been, a major objective at Staley's. Here, comprehensive textile research, unmatched technical know-how and a complete line of highest quality tailor-made starches, gums and dextrins are all geared to but one goal—quality improvement of your products.

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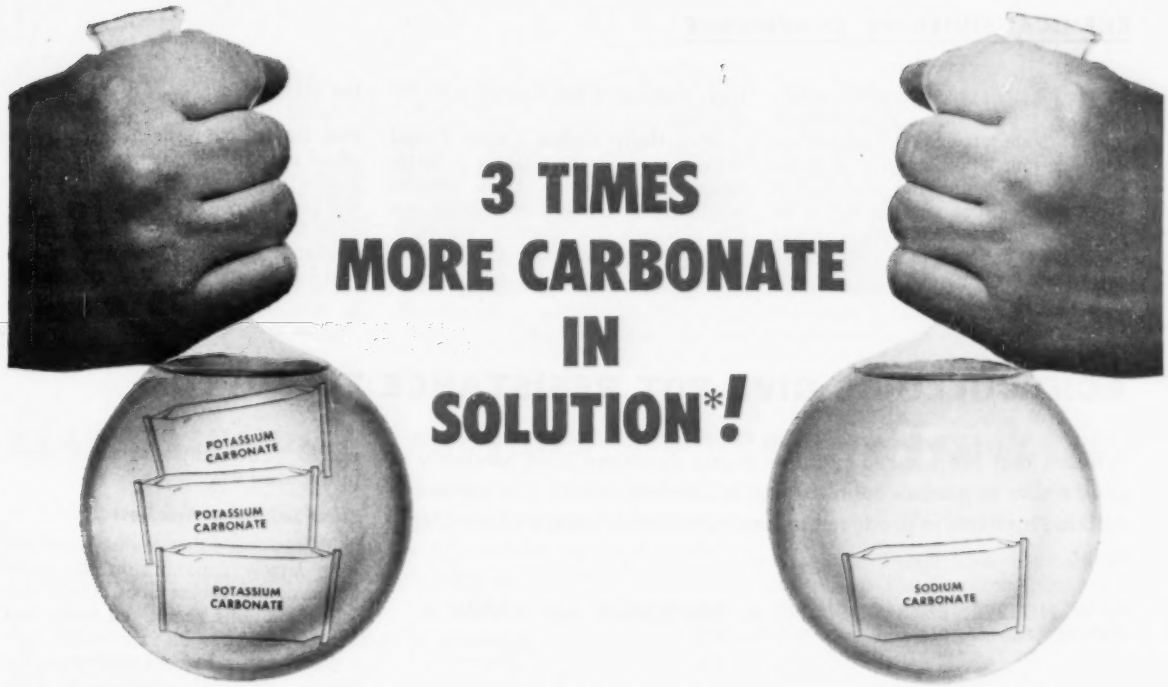

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laundering under recommended conditions of application. Crease-resistant properties are retained, and there is no damage from chlorine when it is included in the laundering process. On dyed fabrics that are subjected to chlorine bleaching, the acetals appear to have a definite protective effect against the lowering of tensile strength from reaction of the dyestuff with the chlorine.

After thirty washes, fabrics treated with the acetal resin retain a better crease-angle recovery than samples finished with DMEU or triazone resins, although this property was originally somewhat lower on acetal-treated fabrics than on fabrics treated with the other resins.

Some trials run to date indicate that the acetal resin has very little effect on the lightfastness of fabrics dyed with some Cibacron dyes, but at this point it is not possible to say that all of these colors would show as good resistance to these resins as the ones that have been tested so far.

ACID COLLOIDS GIVE ROT RESISTANCE TO COTTON

• Resins that are used to produce crease resistance have unusually good ability to produce rot resistance in cellulosic fabrics. The authors describe methods to produce the maximum bacteriostatic effect with resins.

By **W. NORBERT BERARD, GLORIA A. GAUTREAUX, and WILSON A. REEVES,** Southern Regional Research Laboratory

The acid colloids of methylolmelamine have been found to give outstanding rot resistance to cotton fabrics and to improve their weathering characteristics.

First experiments at SRRL were made with commercially available trimethylol melamine resin solutions that had been acidified with acetic acid and a metal salt.

These solutions polymerized too rapidly; so formic acid was substituted to produce workable solutions that were stable for at least 8 hrs.

Application of the acid colloids was by padding, drying, and curing in the usual way.

Best rot resistance was obtained from solutions that were used within 2 hrs. of preparation. A 12% resin add-on of a solution containing 20% formic acid produced fabrics that retained 100% strength after 21 weeks of burial in a soil bed.

These results far exceed those obtained with commonly used fungicides or resins applied in the usual way. They also equal results obtained by partial or full acetylation and cyanoethylation.

Weathering resistance was about the same as for fabrics that had been treated with methylolmelamine resins in the usual way.

Fresh Solutions Are Best

Tests showed that the fresh colloids were largely deposited in the outer layers of the cotton fiber. Older colloidal solutions penetrated better but with inferior results.

Beside providing rot resistance, the formic acid-methylolmelamine solutions produced good crease resistance at a 7% resin add-on level.

Tear and tensile strengths are retained at about the same level as would be expected from a usual application of this type of resin.

Other resins were tested, including methylated trimethylolmelamine, dimethylolurea, an ether derivative of dimethylolurea, and dimethylol cyclic ethylene urea. Acetic acid was added to some of these solutions, and others were used in the regular way. Soil-bed burial test disclosed no advantage of the acidified solutions over the regular formulas of these resins.

HOW RESINS AFFECT LIGHTFASTNESS

• The lightfastness of several classes of dyes is affected by certain finishing materials. Some softeners and creaseproofing agents are particularly bad in this respect. Careful selection of some of the newer resins will help to reduce loss of lightfastness.

By **HERMAN B. GOLDSTEIN,** Warwick Chemical Div., Sun Chemical Corp.

The tests to detect loss of lightfastness were conducted on fabrics that had been treated with a series of UF resins, melamine-formaldehyde resins, cyclic-ethylene-urea resins, triazones, trimethylol melamines, acetone-formaldehyde resins, acrolein-formaldehyde products, epoxy resins, and formaldehyde-hydantoin resins.

The dyes chosen were representatives of direct, D&C, vat, and reactive colors.

Dyeings were made in the usual manner prescribed for the classes of dyestuffs represented. The resins were applied to soured fabrics in normal amounts and then dried and cured. Fabrics were afterwashed before testing for the effect of the resins on lightfastness, with the exception of those that were treated with ethers, which are not commonly afterwashed in mill practice.

Samples were exposed for 10 and 20 hrs. in a Fade-Ometer and rated by the Geometric Gray scale supplied by the Society of Dyers & Colourists. A panel of four determined the shade change, and their opinion was used to produce an average figure. The scale was: 5, no change; 4, slight change; 3, appreciable change; 2 considerable change; and 1, very great change.

The type of resin and the catalyst used to cure the resins affected the lightfastness of the dyes. A relative

ranking of the resins shows that—

1. Dimethylol cyclic ethylene urea resins have the greatest adverse effect on lightfastness.

2. Guanyl urea-formaldehyde resins are next in their effect on lightfastness. Copper compounds added to the bath tend to reduce this effect.

3. To get creaseproofing with little or no effect on lightfastness, it was found that a chlorine-resistant dimethylol cyclic compound, urea-formaldehyde resins, and tetra methylol acetylene urea were most satisfactory. In fact, these compounds tend to increase lightfastness over untreated samples in some cases.

The dimethylol cyclic compound mentioned is still in a semi-works stage.

All classes of dyes tested responded about equally in their loss of lightfastness when treated with the various resins that affect lightfastness, and vice versa. There are differences in the rate and extent of fading of the different dyes, but the over-all effect is consistent when the dyeings are treated with the resins that reduce lightfastness.

Observations made during the work lead to the conclusion that the resins do not react adversely with the dyestuff but that fading may be caused by some light-screening phenomenon such as radiation antagonism.

FLAME RETARDANT PROVIDES GOOD CREASE RESISTANCE

• A chemical developed at Southern Regional Research Laboratories to impart flame resistance to cottons has proved to have useful properties as a wash-and-wear finish medium.

By GEORGE L. DRAKE, Jr., and JOHN D. GUTHRIE,
Southern Regional Research Laboratories

Tris (1-aziridinyl) phosphine oxide, called APO for short, shows considerable promise as a means of producing desirable crease-resistant finishes.

When the APO is applied to cotton fabrics and aftertreated with octadecyl ethylene urea, crease angles of 250 to 300° Monsanto are obtained. The finish is durable to laundering, and its chlorine retention is very low.

APO is a monomeric chemical that forms resins and is also a cellulose reactant. It is trifunctional; so it can condense with itself, react with cellulose, or form a complex resin-crosslink compound.

Application Is Simple

APO solutions are applicable in the usual mill equipment. Treated fabrics may be dried at 80 to 90° and cured for 4 mins. at 140° C. An afterwash in hot water and detergent should follow.

The best catalysts for APO appear to be zinc fluoroborate and boron fluoride.

Goods treated with APO have a soft hand and good color and retain good tensile and tear strengths after treatment. The amount of APO necessary to produce durable crease resistance compares favorably with resins commonly used at this time.

The resin is very resistant to neutral, acid, or alkaline washes and cannot be stripped off the fabric by the usual processes.

A degree of flame resistance is imparted by APO when it is applied to cotton goods. Permanent creases can be produced in cotton fabrics by applying APO, ironing in the desired creases, and curing the sample at 140° C. for 4 mins.

Dimensional stability of APO-treated fabrics is good; they average less than 2% residual shrinkage.

WHAT AFFECTS CHLORINE RETENTION IN RESIN-FINISHED COTTONS

• Resins, catalysts, application methods, laundering processes, and aftertreatments all affect the degree to which chlorine will damage resin-finished cottons. Methods of minimizing chlorine damage are discussed here.

By HUGH H. MOSHER, Arkansas Co.

The cyclic-urea resins are less troublesome as regards chlorine retention and theoretically should be completely free of this fault, but in practical application small amounts of chlorine do react with the nitrogen to form chloramides. Poor curing, insufficient catalyst, lack of afterwashing, steaming, or even storage may tend to cause a small amount of hydrolysis that leaves the nitrogen open to react with chlorine. However, the cyclic-urea resins are basically satisfactory as regards chlorine retention when they are properly handled.

Chlorine retention can be materially reduced if sufficient amounts of the right catalyst are used in the bath and if a complete curing is followed by an alkaline afterwash.

Magnesium chloride and zinc nitrate are most preferred to get initial chlorine resistance and a thorough cure. These compounds produce residues of metallic oxides and carbonates that help buffer the goods against acid damage, at least in the first few launderings.

Tests show that when ¼% zinc nitrate (on resin weight) is included in the mix, the strength loss after 20 AATCC 69-1952 washes is relatively low (36 lbs. original versus 34 lbs. after the 20 washes); but where ⅛% zinc nitrate was used, the ratio was 40 lbs. to 9 lbs. respectively.

CONTINUED ON PAGE 97

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Mild home launderings do not exhibit such drastic differences.

Commercial laundering, done at higher temperatures and with stronger alkalis than home laundering, tends to affect cyclic-urea resin finishes more severely.

How Other Factors Affect Finishes

Even the best resins properly applied may be affected by improper storage, residual acid, steaming, or even sunlight. Residual acidity is the major factor in the degradation of resin finishes and in most cases is a result of not afterwashing the fabrics after they have been cured. The damage done by small amounts of acid left in the goods may not be apparent for weeks or months after the goods have been processed. Bad odor and susceptibility to chlorine damage in laundering are the usual results of traces of acid left in resin-treated goods.

Steam Accelerates Hydrolysis

During the final finishing steps, resin-finished fabrics may be steamed as a prelude to calendering or shrinkage-control operations.

It has been found that steam can unblock the amide radicals in a cured cyclic-urea resin within a few seconds and thus leave it more open to chlorine attack in laundering.

A series of tests showed that resin-finished goods steamed for 15 secs. at 213° F. lost about 30% of their strength after an AATCC 69-1952 wash and that similar goods steamed for 60 secs. at 214° F. lost up to 43%. All samples had 5% DMEU resin and had been finished to pH 7.1. Unsteamed fabrics showed no loss of strength after one AATCC 69-1952 wash test.

Sunlight does not appear to affect DMEU finishes as regards subsequent behavior toward laundering, at least in the light of a preliminary report. The resin did afford some protection against the degradation of the fabric by sunlight.

IMPROVING THE SMOOTHNESS OF COTTON FABRICS

• Various methods of swelling cotton fibers are described, and their effect on surface and hand are evaluated in this work.

By **CHARLES GOLDTHWAIT, ROSA D. KIRBY, SAM FRETWELL, and HANS WIEHART,** Textile Research Center, School of Textiles, N. C. State College

Samples of 80-square print cloth were preswollen with caustic soda, sulfuric acid, and cupriethylene diamine (Cu-en) and then calendered at 400° F. and 1,100 lbs. per in. of nip without drying. Some samples had a softening agent applied before the wet calendering (Zelan AP), and some samples were dried after preswelling and the addition of finishing agents and then calendered dry.

All the fabrics that were preswollen with the agents mentioned showed a higher residual water content after extraction than goods swollen only with water. This effect was much reduced if the goods were dried after preswelling and then reimmersed in water and similarly extracted.

The surface effects produced by the preswelling in the various agents and subsequent wet, hot calendering were generally highly glazed, smooth, and stiff. The finishes could be broken down in many instances by a simple direct dyeing process, by boiling in a detergent and a mild alkali for 30 mins. in an open kettle, or by putting them through a normal washing cycle in an automatic washer at 140° F. for 10 mins. with the usual rinses.

Residual swelling depends upon the concentration of the swelling agent; but although similar results were obtained with each of the agents, the nature of the swelling appears to differ. Both sulfuric acid and Cu-en tend to dissolve cotton, but caustic soda does not. Hence, highly glazed finishes that do not break down readily were produced by the sulfuric acid and Cu-en reagents.

How Caustic Soda Works

Caustic of mercerizing strength produces very bright glazes on wet-calendered goods, which breaks down to a high luster superior to ordinary mercerization. Experiments with mercerized fabric washed with weak caustic showed that even when very weak (2%) washing solutions were used, the cloth was too weak to extract in the cold calender.

Sulfuric acid yields the smoothest finishes. The best results were obtained by immersing the cloth for 45 secs. at 80° F. in 63% acid. The goods developed a high luster when they were calendered wet, but the luster was not permanent. There appears to be no advantage over the caustic-soda treatment in this respect.

Cupri-ethylene diamine produces a glazed finish that breaks down during dyeing or boiling to a durable luster. However, the luster will not withstand too much laundering. Goods treated with Cu-en do not dye as dark as caustic-treated goods but dye about the same as sulfuric-acid-treated fabrics.

Dry Calendering Also Works

Goods treated in the various reagents and then padded in Zelan AP and dried produced interesting finishes when they were calendered dry. After deglazing at the boil, they came out less lustrous but were soft and smooth. Goods preswollen with sulfuric acid were in most cases noticeably softer and smoother than those preswollen by the other agents.

Dry calendering is more practical and has less tendency to cause fibers to stick together.

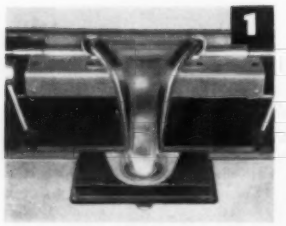
Cu-en treatments followed by dry calendering showed results similar to those obtained with sulfuric acid.

The less promising preswelling with caustic soda offers the least departure from ordinary finishing processes and might be usable if partial drying of the fabrics is practical.

General conclusions from the experimental work done so far are that preswelling with Cu-en should lead to the most durable and acceptable smooth finish. On the basis of smoothness alone, sulfuric acid appears to yield slightly more favorable results.

It is also noted that dyeing problems would arise on goods that had been preswollen, treated with Zelan AP, and calendered. Alternative to dyeing after calendering would be to dye the wet swollen goods, a process that should be very economical of dye but might present other problems of uniformity.

Another possibility is to dye before preswelling with vat dyes that are resistant to the swelling agents.



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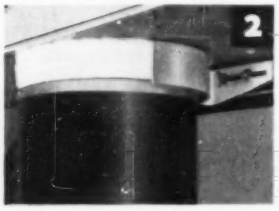

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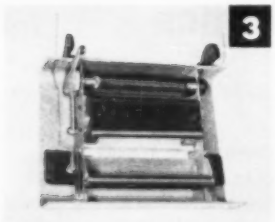

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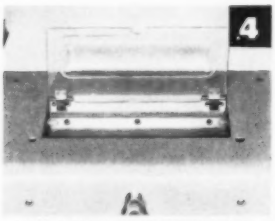

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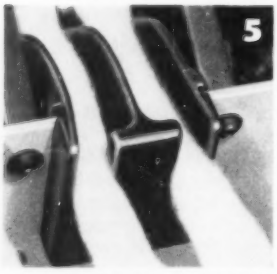

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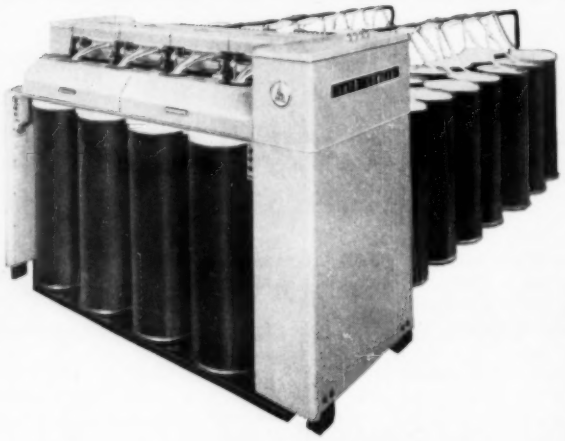

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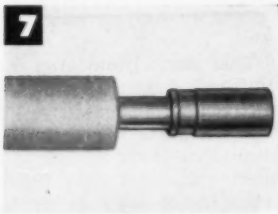

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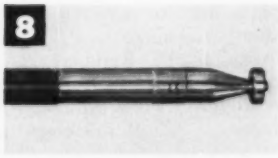

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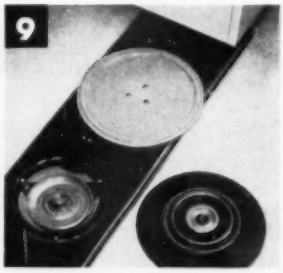

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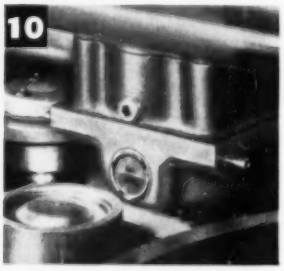

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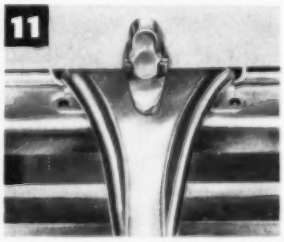

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What You Say Versus What You Are

- Much of the stability in our lives is due to the close correlation between what we ordinarily expect and what actually happens. So it's a jolt when a person says things that conflict with our ideas of what he is or should be.
- Supervisors make trouble for themselves and for their workers when their talk reveals attitudes and shortcomings workers don't expect supervisors to have.

By S. G. WILLIAMS, Management Consultant

Your being a supervisor, in itself, means certain specific expectations are associated with you. Everyone has an image or stereotype of a supervisor in his mind, whether consciously or not. Everyone expects every supervisor to live up to at least the core essentials of that image. Most supervisors do live up to it. But often they don't talk the part.

You Are a Manager

Whether or not top management treats you like a manager, to your subordinates there is no question about it: "supervisor" means "manager" as distinguished from "worker." Therefore, you are expected to talk like a manager.

Whenever you talk, like a non-manager, it is disturbing to your employees. They may laugh or seem pleased when you say something to indicate you're one of them, on their side instead of on management's side; but it will still make them uncomfortable. This in turn, of course, affects their work so that getting your department's job done is more difficult than ever.

A young helper, his second day on the job, checked with the loomfixer with whom he was working:

"Say, Mr. Elwell, is the boss a member of the union?"

"No. Why?"

"Well, he said a couple things made me wonder, that's all."

"What'd he say?"

"Well, for one thing, he said the union would take care of any little problems I had, after I joined up."

"Yeah. That's the way Mr. Sohmers talks, all right."

"Well, it kinda worries me. With the steward and Mr. Sohmers both saying the same thing, who takes the management side here?"

The young fellow, if he stays, will probably get accustomed to the two-sided Mr. Sohmers. But he isn't likely ever to lose the emotional discomfort caused by the fact that his boss doesn't talk like a boss.

Perhaps even more critical, and certainly more frequent, are the times when an overseer says, "Management wants us to do so-and-so" or "This is a direct order from management." The group he is talking about certainly doesn't seem to include him—yet he's a manager, he's "management," too.

You Are a Boss

As a supervisor, you have responsibility and authority for your area. Whenever you relinquish either or pass the buck or use any one of a hundred phrases that deny your responsibility and authority, you are letting what you say battle against what you are.

We've heard an overseer say to his superior:

"If that blankety-blank Jones would get a move on, we'd make that schedule."

Now, it would make sense for an employee to make such a statement about a lazy supervisor; but for a supervisor to say it about an employee—who is the boss in that department, anyway, Jones or the overseer?

Often a supervisor feels he is doing a first-class job of delegating when he tells an employee:

"You've got full responsibility for this, from now on."

It isn't true, of course. The supervisor has the full responsibility as long as he is in the supervisory position. The employee would be perfectly justified in asking out loud what he's probably wondering silently:

"If I've got full responsibility, what the heck are they paying you for?"

You Are an Example

In the eyes of your employees, you're a success. A lot of them aspire to getting where you have already arrived. Naturally, they figure the way to get there is to be like you. This is one of the reasons why it upsets their equilibrium when you are one thing and talk like another thing. Which example are they supposed to follow?

We had the interesting (but disillusioning) experience of standing in a plant reading on a bulletin board a brand new sign:

"ABSOLUTELY NO GAMBLING PERMITTED IN THE SHOP"

and at the same time hearing a foreman bragging about winning the department pool on the local football game. He was the same man who had tacked the sign up on the board, the one man in the department with the clear assignment to enforce the rule.

A familiar joke is the bandaged Safety Director. Not funny, however, is the supervisor who pooh-poohs the

CONTINUED ON PAGE 140

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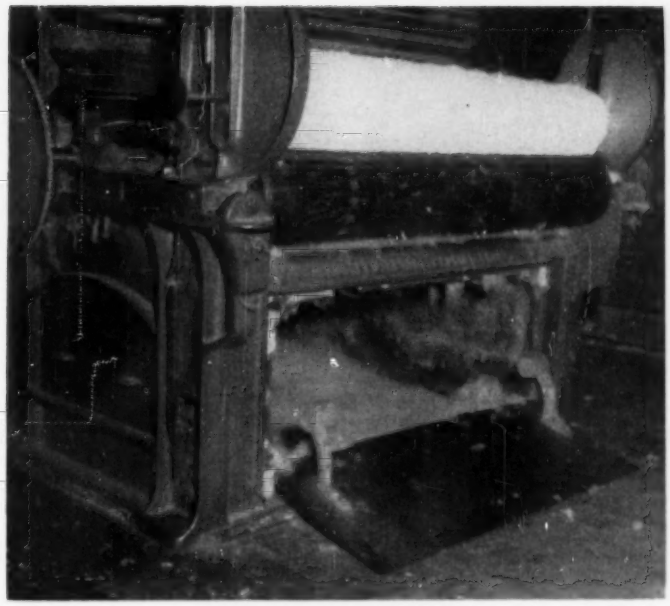

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Customer				Bale No.		Changed by		Date	
Const.	Width	Ends dent	Reed No.	Cut No.		Inspected by		Date	
Warp No.1 size				Ends		Code-color			
Warp No.2 size				Ends		Code-color			
Warp No.3 size				Ends		Code-color			
Filling box 1						Code			
Filling box 2						Code			
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Prod. Control Dept.			Finishing Dept.						
Weight	Total yds.		Weight		Total yards				
Customer			Order No.		Bale No.				
Loom No.			Weave room						
Style					Weight				
X-I			XX		Total yds.				
Defect	1st	2nd	Defect	1st	2nd				
Jerk-ins			End out						
Jerk-backs			Misreed						
Broken-pick			Misdraw						
Mispick			Reed-marks						
Start-up			Slack ends						
Slough-off			Oily ends						
Shiners			Slubs						
Dirty filling			Hole						
Filling bars									
Bale No.	Style		Order No.		Customer				
Total yds.			Pattern		Color No.				

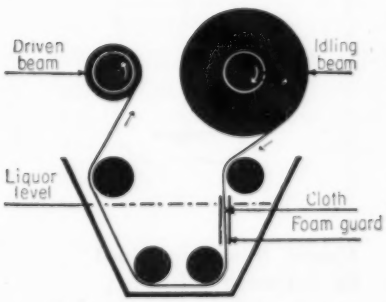


Fig.1-thread-up for first end

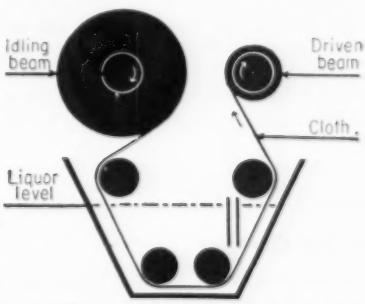


Fig.2-thread-up for rest of ends

Foam Guard in Jig Reduces Cloth Specks

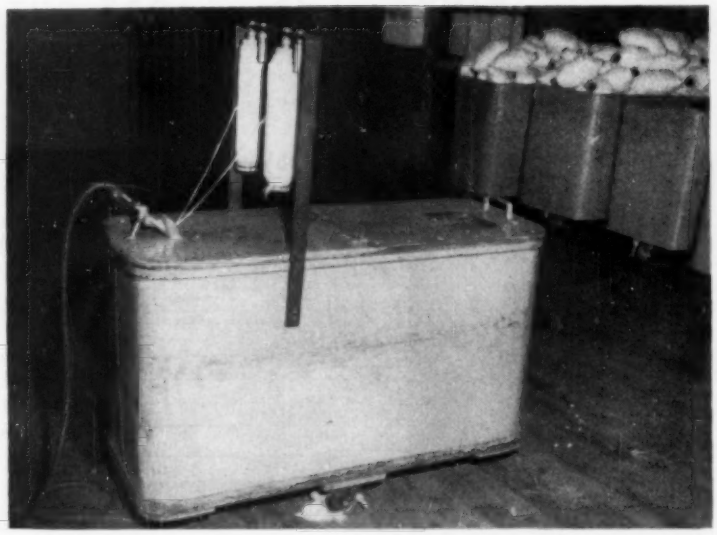
When cloth enters a jig for the first end, there is often a tendency for the cloth to pick up foam or scum from the surface of the liquor, which causes stains or specks. This action can be prevented, as shown in Fig. 1, by equipping jigs with a pair of plates that slip into brackets at the end of the jig and form a narrow box. This box keeps scum and foam from contacting the entering cloth. On succeeding ends, the cloth skips the box (Fig. 2). (K-4054) *Dyelines, American Cyanamid Co.*

For our looms, we formerly used a cloth ticket that contained all necessary information; but it had the list of cloth defects printed on the back. The ticket printed on both sides was expensive, and cloth-defect information was not being fully utilized because the ticket was routed to the accounting department from the weave room. As a result, it was necessary to print another cloth-defect report for the weave room.

We have now combined all necessary information on one side of a single ticket that is perforated so that the appropriate parts can be routed to their correct destination and pulled off in each department.

In a year's time, the new ticket saves a lot of time in handling 60,000 orders; and printing cost has been reduced $4,200. (K-3810) *Fred H. Drewes, Kings Mountain, N. C.*

KINKS AND SHORT-CUTS



Mill-Made Stripper Quickly Cleans Roving Bobbins

We built a simple but effective roving stripper from an old roving truck as shown in the photo. Here's how to do it:

Make a top for the truck, and hinge it so that one-half of the cover can be lifted to remove waste. Build a creel over the other end that will hold several bobbins on roving hangers.

Put a 1-in. piece of pipe through the creel end of the box, and rig a connection for an air hose. The compressed air shooting into the pipe will pull the roving off the bobbins at a high rate of speed.

Leave the casters on the truck so that it can be transported to any part of the room where there is an air connection. A barrel or other container can also be used. (K-4063) *Carolina Mills, Inc., Newton, N. C.*

Wrap Needle To Repair Press-Offs Easier

Most knitters and fixers repair press-offs on rib knitting machines by pulling the fabric between the dial and cylinder with an old latch needle. After a time, the needle becomes difficult to hold and it slips from the fingers.

You can make the job easier by wrapping a length of old yarn around the stem of the needle above and below the butt. This yarn increases the diameter of the stem and makes it easier to hold between the fingers. (K-3325)

Best-Kink Award for October

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for October, according to TEXTILE WORLD reader-judges, was:

"Rugged, Simple Gear Puller Pulls Gears Without Slipping"

Charles H. Willey, Penacook, N. H.

Mr. Willey is being sent a check for $25 with the compliments of TEXTILE WORLD.

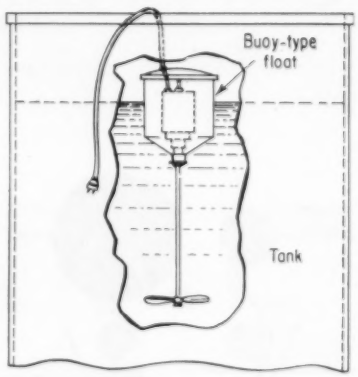
Proper Thickeners Solve Flannel-Printing Problems

We had a red and black pattern to print on flannels that gave us four problems: (1) too much penetration, (2) bad crocking, (3) tarnished red (from the black), and (4) a very high color cost.

We licked all these problems by using a starch paste for the black, which is a water-phase mix. Then, to overcome the tarnishing effect of the black on the red, we put the red color in an oil phase. A straight oil-phase mix made from ethyl cellulose clear did not solve the other problems of penetration, crocking, and cost; so we made up two reds, one in ethyl cellulose clear and one in sodium alginate.

The alginate mix was added to the ethyl cellulose mix with agitation that allowed the alginate mix to get inside the oil-phase ethyl cellulose mix. This combination of thickeners solved all four problems.

Be sure to add alginate to ethyl cellulose; to reverse this order will break the emulsion. (K-3998) *Malcolm Mackay*

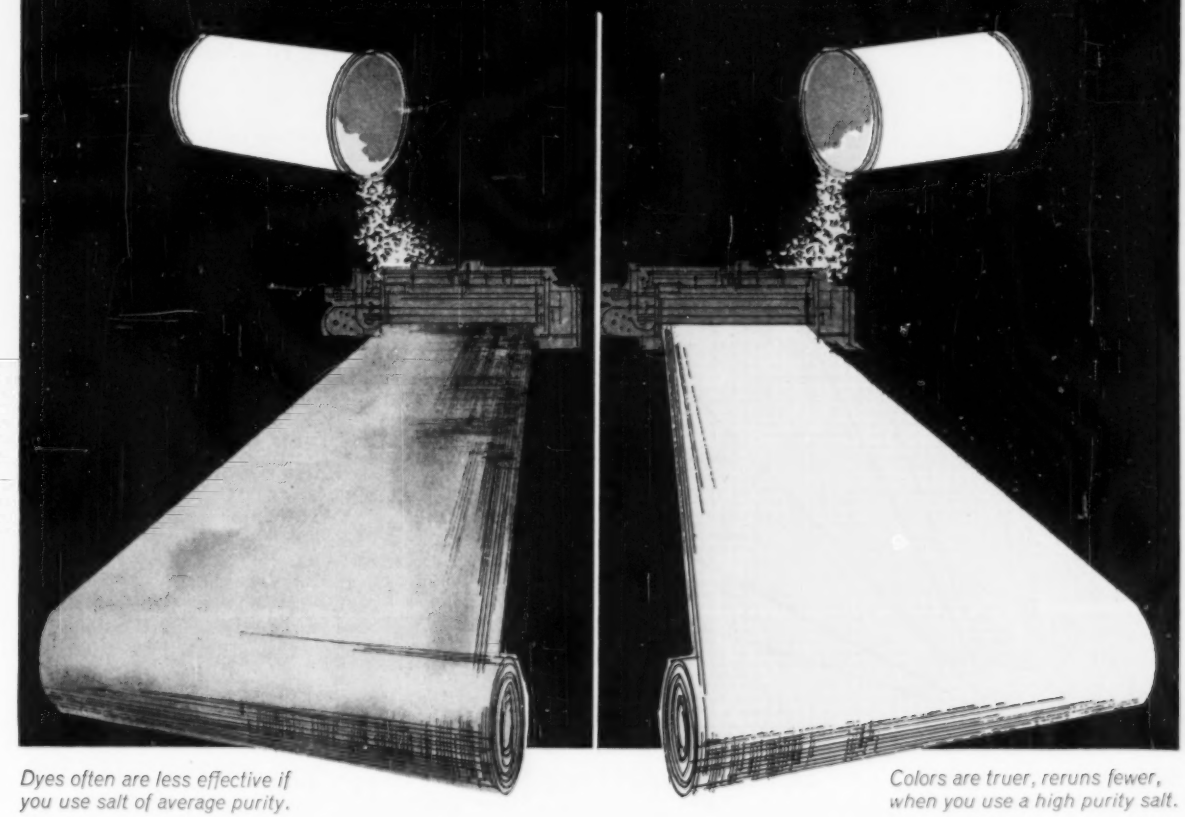


Mount Mixer in Float To Increase Efficiency

Where it is important to get quick and thorough mixing in large tanks, a high-speed mixer will do a better job if it can be moved about the tank.

We built a metal container for our mixer that will float it on top of a large tank used to dissolve salt for water softening. The float is equipped with a stuffing box so that no liquid can leak past the mixer drive shaft. (K-3959)

Let your dyes do the job the manufacturer intended!



Dyes often are less effective if you use salt of average purity.

Colors are truer, reruns fewer, when you use a high purity salt.

Use Morton Chemical Grade 999 Salt

Morton Chemical Grade 999 is the all sodium salt (sodium chloride and a trace of sodium sulphate) that many dye manufacturers use in testing their dyes. When you use Morton Chemical Grade 999 Salt in your operation, it complements your dyes . . . makes them more effective, and helps you get softer finishes, more even shades, and greater color intensity.

And no wonder! Morton Chemical Grade 999 is more than 99.9% pure sodium chloride. It is a low cost, high purity evaporated salt free from objectionable calcium and magnesium compounds that may precipitate or react with dyes to reduce their effectiveness.

Available in 100-lb. bags or bulk, Chemical Grade 999 is recommended for use **whenever commercial calcium-free salt is required.** It's specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct, or naphthol dyes.

☐ *Please send me more information about Morton Chemical Grade 999 Salt.*

☐ *I would also like to know how much I can reduce calcium and magnesium content by using Morton Chemical Grade 999 Salt. Please have a Morton Brine Engineer arrange a mutually convenient time to discuss the benefits of using Chemical Grade 999 Salt.*

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Title _____

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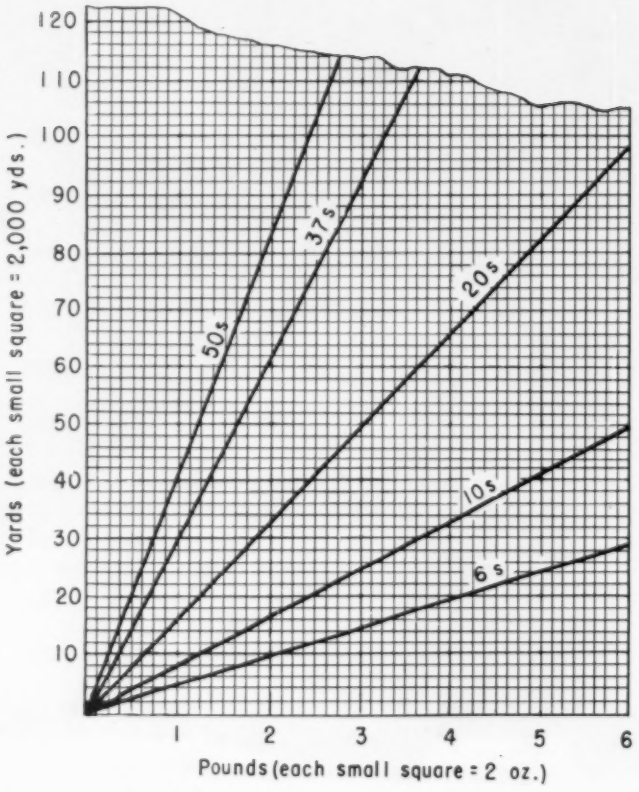
KINKS AND SHORT-CUTS



Graph Shows Yardage on Different-Weight Cheeses

We frequently have to weigh cheeses to determine the number of yards on each cheese. A little knowledge of the theory of yarn numbers and the ability to use a slide rule make the computations simple, but the fixer who doesn't understand mathematics must get someone else to compute the yardage for him.

To help our fixer, I plotted a graph of the different yarn numbers we run, with the weight in pounds and ounces on the abscissa and the yardage on the ordinate. Each small square represents 2 oz. on the abscissa and 2,000 yds. on the ordinate. The graph is easily read and accurate enough for general purposes.

On my graph, there are straight lines representing the numbers we run; any number of yarn sizes can be added to meet individual needs.

The lines are drawn by plotting the points for three different weights and their yardage for each yarn number. For example:

1 lb. of 10s has 10x840 = 8,400 yds.

2 lbs. of 10s has 2x10x840 = 16,800 yds.

3 lbs. of 10s has 3x10x840 = 25,200 yds.

(K-3978) *Gene G. Floyd, Clinton, S. C.*

Improvised Bearings Add Life to Cap-Bar Nebs

On our spinning frames, the top-roll sections weigh several pounds and their rotation in the cap-bar nebs caused the nebs to wear down within a few months. This action lowered the rolls and caused ends down. We reversed the rolls, but after a few more months the other end wore out.

We solved this problem by making small bearings of mild steel similar to wooden bearings and inserting them in the cap-bar nebs. The bearing has an opening in the top so that the roll necks can be lifted in and out easily. (K-3437) *I. J. Abraham, Warangal, India*

Paint Tricot Guides To See Fine Yarns

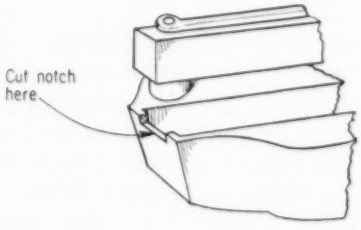
Fine rayon or nylon yarns are difficult to see when the guide bars are traversing on tricot machines.

We've painted our guide bars black so we can see the yarns better, and we have cut down on broken and tangled ends that caused faulty fabric and broken needles. (K-3970) *Hokao, Fukaya, Fukui-ken, Japan*

Use Door Stops To Raise Stools

We use lots of stools in our knitting mill for such jobs as sewing, threading, and inspecting. The correct height of the stool is important, and blocks of wood and other materials have been used to raise the stools.

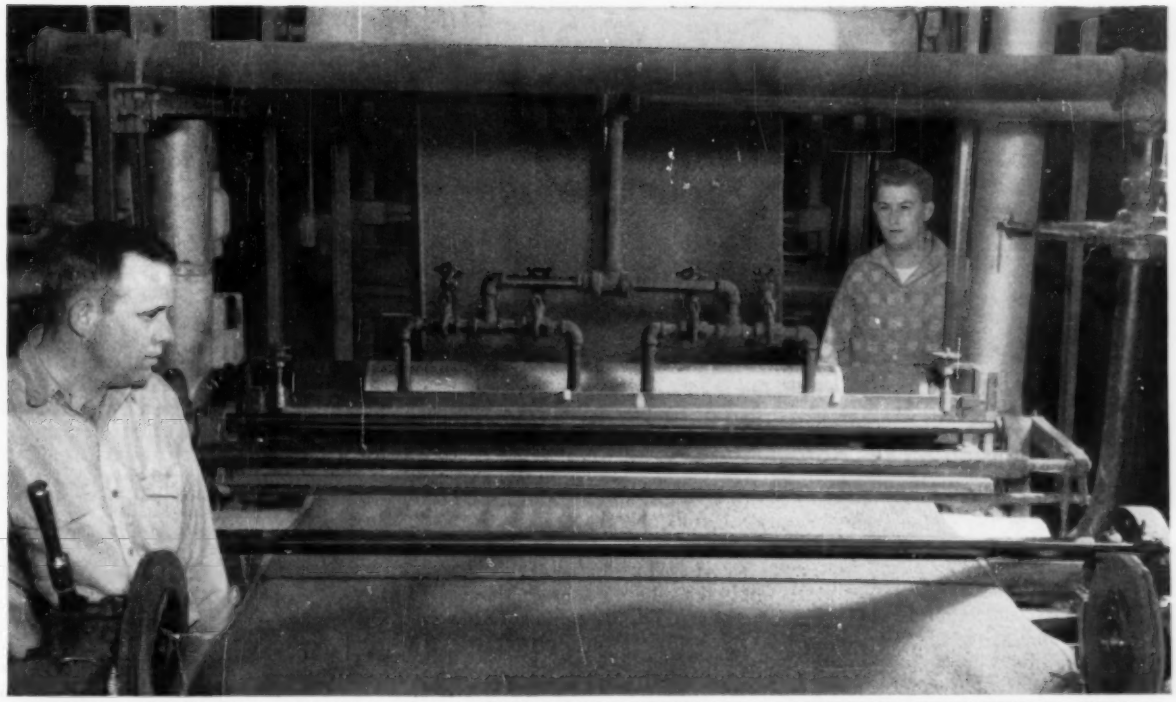
We've found that the best method is to use door stops to bring the level of the stool to the correct position. To install the stop, screw a small hole in each leg of the chair and screw the stop in the hole. (K-3678)

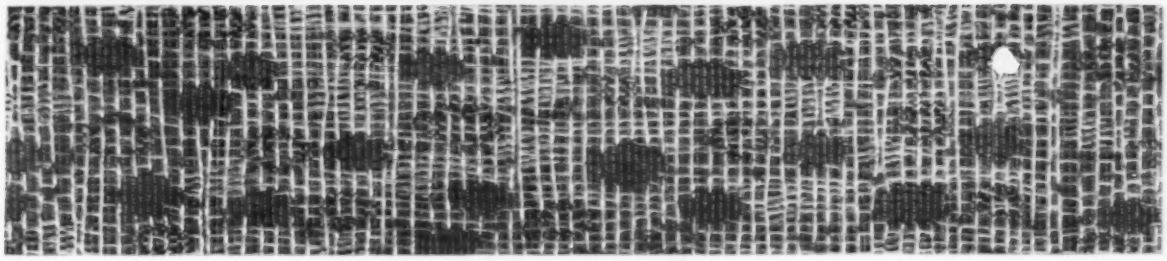


Loom Lay-End Strap Fits in Filed Notch To Prevent Wear

When a lay-end strap is looped around the loom lay end in the usual manner, the bottom of the picker often hits the strap and causes wear. And sometimes the picker rides the strap and causes the shuttle to be raised slightly on the pick.

A notch filed in the lay end the depth of the thickness of the leather strap will recess the strap and will prevent the picker from touching the strap. (K-3795) *Grady Turner, Clinton, S. C.*





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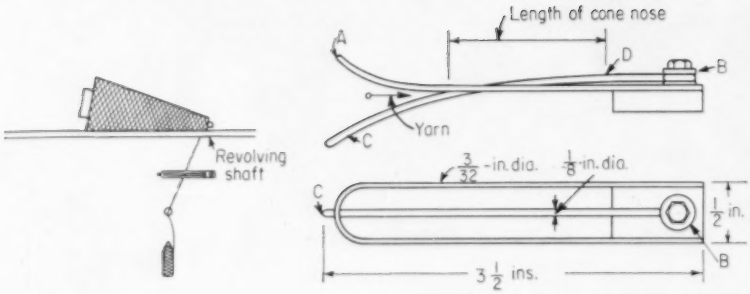


Winder Tension Makes Harder Cone Nose

We used to have trouble in forming the noses of the cones made on our Schlafhorst winders. It was particularly difficult to make a hard cone nose from lustrous worsted yarns.

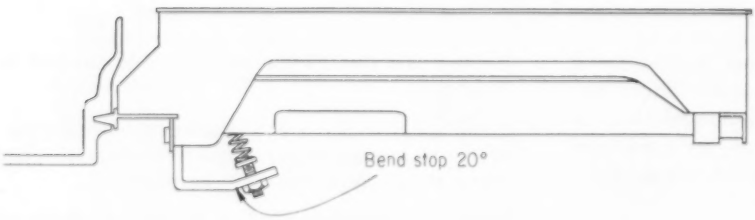
I solved the problem by designing and building a simple progressive tension that can be fastened to the frame under the cone nose. The tension is made from 3/32-in. steel wire bent in the shape of a U as shown in the diagram. The wire *A* is screwed to a piece of iron at *B*. Another wire *C*, preferably a little thicker than wire *A*, is arranged to pass through the U as shown.

Yarn traveling from the mouth to the end of the tension at *D* is subjected to constantly increasing pressure that builds a hard nose on the cone. The trial-and-error method must be used to arrive at the correct tension. (K-3950) *N. Primentas, Abbotsford, Melbourne, Australia*

Easy Way To Change Head-End Cylinder

Here's an easy way to remove a 10-in. cylinder from the head end of a Saco-Lowell spinning frame. The steps are:

1. Take head-end journal out and slide first cylinder toward the head of the frame.
2. Cut second journal with hack saw and lift cylinder out.
3. Cut new journal 20 ins. long, and slide as far as possible into second cylinder. Put bearing in place.
4. Put head-end cylinder in place, and slide new journal back into head-end cylinder at second bearing end.
5. Put head-end journal in first cylinder. Get first and second journals in proper position, and tighten set-screws. (K-3979) *Willie White, Musgrove Mills, Gaffney, S. C.*



Altered Binder-Spring Stop Holds Shuttle in Loom Box

When a shuttle has been idle for several picks on a 4x1-box multi-shuttle loom, vibration often causes the shuttle to creep forward in the shuttle box. Then a bang-off occurs.

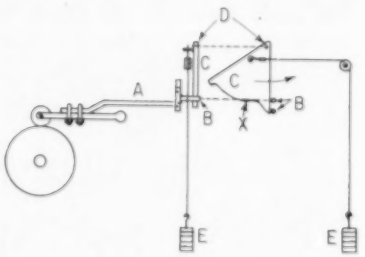
Normally, the arm of the bracket that holds the binder spring and its adjusting screw is parallel to the binder. If this arm is bent at an angle of about 20° so that the spring pushes against the binder and also exerts a backward pressure, as shown in the accompanying sketch, it will help hold the shuttle stationary. (K-3856) *Octave Benoit, Cowansville, Que.*

Notches in Loom Dobby Jacks Are Welded for Longer Life

A dobby jack eye usually wears only one or two notches in a given dobby jack. Then the dobby jack has to be discarded because it gives the harness a saw-like jerky movement, which chafes and breaks warp ends.

Instead of discarding these worn jacks, we now build them up with brass in our mill welding shop. The welded spots are finished smooth, and the jacks are repainted loom green.

Because the repaired jacks are attractive, loomfixers accept them as readily as new ones and our supply cost per loom is reduced. (K-3751)



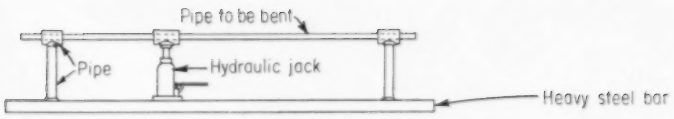
Knock-off Motion Stops Winder Quickly

We have designed a simple and successful knock-off motion for lifting the cone or cheese holder when the package reaches a predetermined size. Here's how to make the attachment:

Extension *A* is attached to one of the holder arms. At the end of this extension, adjustable stud *B* is secured by two bolts. Plate *C*, fulcrumed at *D* and weighed with changeable weight *E*, rests with its straight face on stud *B*.

When the bobbin reaches the desired diameter, the stud permits the plate to move in the direction of the arrow. Because of its shape, the plate moves freely up to point *X*; but from now on the curved surface of the plate comes progressively into contact with stud *B* and presses it downward. This action makes the cone or cheese leave the cylinder or drum and stop.

To change the size of the package, the position of the stud is altered—the higher the stud, the bigger the bobbin. (K-4021) *K. Primentas, Abbotsford, Melbourne, Australia*



Jig and Hydraulic Jack Bend and Straighten Pipe

A cheap and easily made jig to straighten short pieces of pipe or to bend them to various shapes can be made from a few odd pieces of metal and a hydraulic jack.

First weld a short section of pipe to the top of the jack. Then weld two pieces of pipe about 1 ft. long vertically near the ends of a heavy steel bar.

Weld a short section of pipe like that on the jack to the top of each vertical pipe. The vertical pipes should be long enough to align with the jack top when the jack is at its bottom position.

To use the jig, put a pipe to be bent or straightened through the three short pieces of welded pipe. Then raise the hydraulic jack to bend the pipe. (K-4056) *Virg Randall in The Stabilizer.*

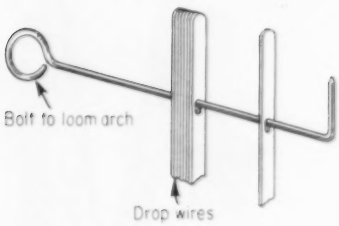
Paper Aprons Protect Warps From Oil and Grease Stains

We formerly used cloth aprons to protect the warps on our looms; but these aprons had to be replaced often and were expensive. Now we use waterproof paper that lasts longer than cloth because it does not become saturated with oil and grease. The paper is also cheaper.

The corners of the paper are cut to form smooth round surfaces, and masking tape is doubled over two sides of the paper. Holes are punched through the tape and paper for a heavy cord. The cord is tied to the whiproll stands with the paper hanging loosely inside the loom in front of the loom yarn beam.

As the yarn runs off the yarn beam, the paper follows the yarn on the beam by gravity. After the paper is put on the loom, no further attention is required for a long time. (K-3749)

Wire Hangers on Looms Hold Extra Drop Wires



Weavers frequently need extra drop wires at looms to replace damaged ones and to put in extra warp ends at selvages when an extra end is added inadvertently at warpers or slashers.

A drop-wire holder at about every 8 or 10 looms in a weaver's set of looms makes it easy to locate a needed drop wire quickly and therefore to shorten the time a given loom is stopped.

Such a holder can be made from a short piece of dobby top harness wire bent as shown in the accompanying sketch and fastened to a loom arch. (K-3778) *H. E. Wenrich, Bloomsburg, Pa.*

$500 for Best Kink in 1959 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any Idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1959.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

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54-In. Narrow-Fabric Loom

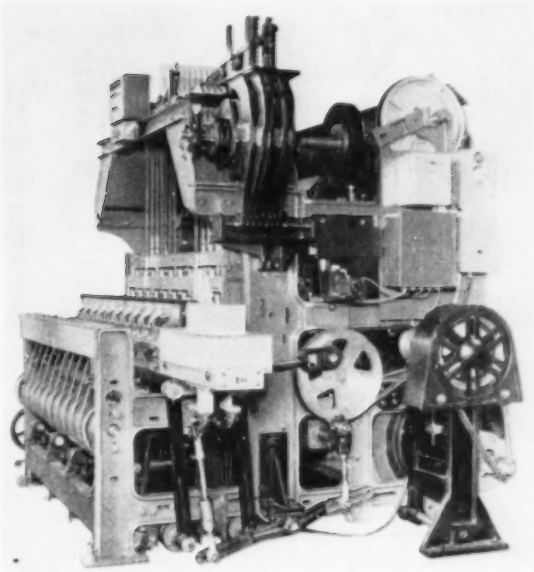
A 54-in. narrow-fabric loom has been designed by The Fletcher Works, Narrow Fabrics Div., to weave heavier webbing without the bulk of the average huge machine usually used. The loom, Power-Fab, weaves a greater variety of narrow fabrics and webbings with a minimum of mechanical changes.

The result is a more versatile and productive loom that occupies less floor space. Heavy government-specification webbings are woven at speeds up to 250 ppm.; lighter fabrics are woven at 300 ppm.

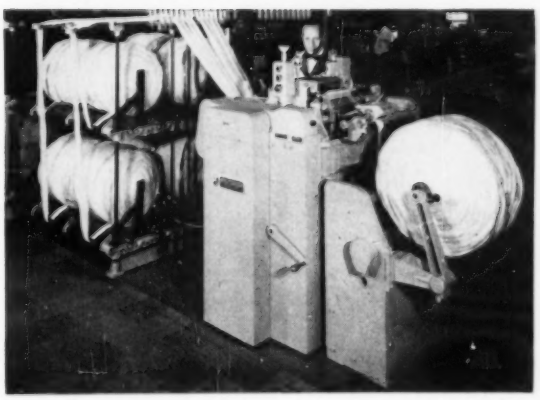
The loom has a new pin-roll take-up motion with upper and lower tension rolls. The breastbeam and take-off rolls are on ball bearings, and this setup acts as a warp-tension equalizer.

Quills 1¾ ins. in diameter are used for heavier webbing. Individual harness-frame guides reduce the harness load for the entire loom. A heavier camshaft and larger cams provide easier and smoother harness lifting at higher speeds.

The loom is 8 ft. over-all. Standard 54-in. yarn beams are used; they are double or triple decked for the ply fabrics being woven.



Circle T-1 on Reader-Service Card



Pin Drafter

A wide set-over pin-drafter intersecting drawing frame that has 33% greater pinning area and input capacity than previous models has been announced by Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio. The machine can handle all pin-controlled drawing needs including backwashing and assembler operations and precombing jobs.

Delivery systems include single- and dual-can delivery and a balling-head unit that delivers an 18x24-in. ball weighing up to 50 lbs. The balling head requires only one-half the space of older models. The pin drafter's 8-in. plastic-bonded faller bars function at a constant speed of 1,500 faller drops per minute.

Circle T-2 on Reader-Service Card

Rider Scrubber Machine

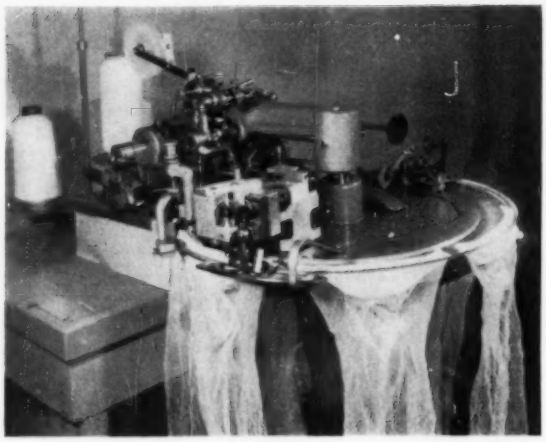
A rider-type combination scrubber-vacuum machine capable of cleaning up to 64,500 sq. ft of open floor area an hour has been introduced by Finnell System, Inc., Elkhart, Ind.

Designed for users with a minimum area of 50,000 sq. ft. to be cleaned, the Finnell 72-F machine removes dirt and grime by the action of four 18-in. brushes operating at 180 rpm. under variable pounds of pressure on the floor. The brushes agitate a cleaning solution dispensed from a 150-gal. solution tank.

The machine is powered by an air-cooled 27-hp. gas or propane engine; all brush and squeegee movements are actuated by a hydraulic power take-off system controlled by the operator.

With an over-all length of 114 ins. and a width of 72 ins., the machine turns in its own length and operates effectively in a 10-ft.-wide aisle. It turns around in an intersection of 10-ft. aisles. It operates at 2 to 3 mph. and travels at speeds up to 15 mph.

Circle T-3 on Reader-Service Card



Automatic Looper

An automatic looper for hosiery and outerwear machines has been announced by Scott & Williams. Inc., for its new corporation, AMSL Corp., High Point, N. C., and 266 Union Ave., Laconia, N. H. The looper runs 550 rpm.

Advantages of the looper are: output is increased greatly, eyestrain of looper operators is eliminated, the job is now safe, and the common long training period to secure competent operators is eliminated.

The attachment can be applied to any standard looper in a few hours. No change is required in the line, and therefore no alteration is required in the knitting machine.

Stockings looped with the attachment are looped and seamless.

The looper is the invention of Messrs. Mann and Bley, Philadelphia, Pa., and will be sold to licensees of AMSL Corp.

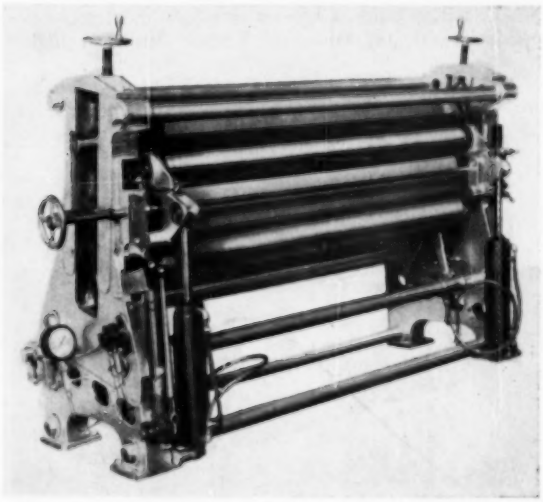
Circle T-4 on Reader-Service Card

Roll Stand

A heavy-duty roll stand for embossing plastic-coated fabrics or plastics is available from Development Engineering Co., Inc., 9 Cross St., Norwalk, Conn.

The unit is designed to operate at up to 15,000 psi. on each journal and is equipped with a manually operated hydraulic-pressure system. Extra equipment for water cooling, variable speed, and other auxiliaries is available.

Circle T-5 on Reader-Service Card



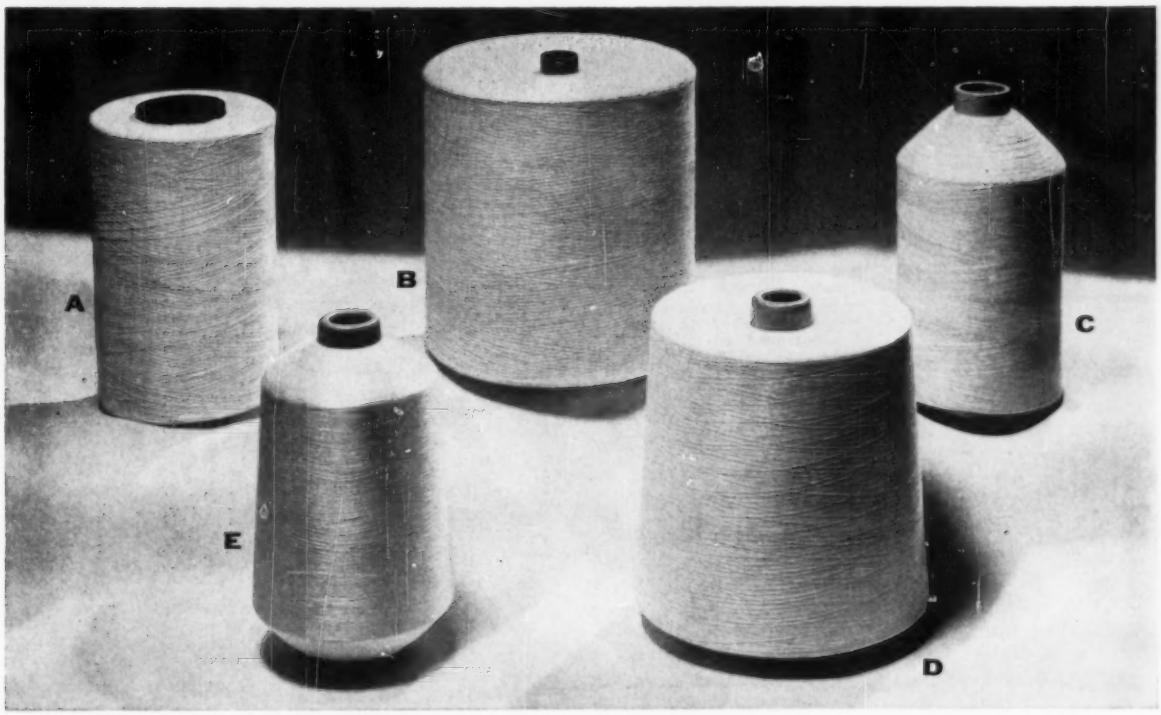
Roll-End Splicer

Rolls of goods going through process can be spliced instead of sewed by means of a splicing method and machine developed by Minnesota Mining & Mfg. Co., St. Paul, Minn., and Precision Machine Co., Greenville, S. C.

The join is made by overlapping the cloth ends and applying a strip of dry thermosetting adhesive. Pressure and heat from the splicing machine cause the adhesive to flow between the fabric layers and spaces between ends. The join is ½ in. wide and only as thick as two layers of fabric. Splices made in this way will withstand all normal wet-processing steps.

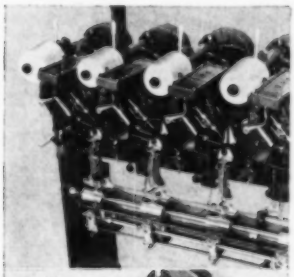
Circle T-6 on Reader-Service Card

For Versatility and Quality Packages

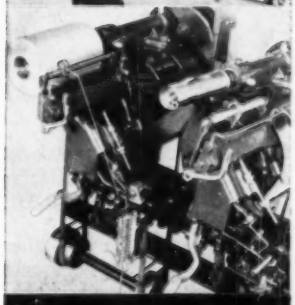


A — 1⅝" dia. rayon dye tube. B — 6" parallel tube of cotton yarn. C — King spool of cotton thread. D — Straight edge cone of filament yarn. E — Pineapple cone of filament yarn.

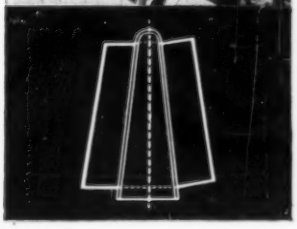
Use the FOSTER MODEL 75 WINDER



Pineapple cone attachment



1⅝" dye tube holder and pressure roll assembly for producing rayon dye packages, any softness desired.



Right-hand side of diagram shows how Foster Model 75 cone is wound. Left hand side shows how conventional cone is wound.

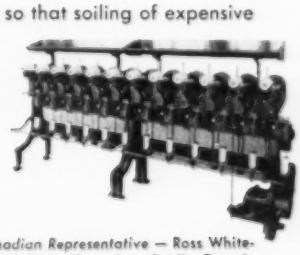
VERSATILITY — The photograph above shows five different types of packages that can be produced on the Foster Model 75. Different machine parts, of course, are required, for different packages, but changeovers are readily made.

QUALITY PACKAGES — The Foster Model 75 uses the precise wind principle. Motive power is applied direct to the spindle, rather than to the surface of the package, and each spindle is driven by an individual 180° contact, quarter turn belt, insuring constant spindle speed.

The Model 75 cone has a convex base. The base is at about 90° to the surface of the paper carrier instead of to the axis of the spindle. Thus each layer of yarn at the base is in a progressively higher horizontal plane, so that it does not nip the layer below. This construction also directs the pressure of the yarn downward, enabling the cone to hold its shape and preventing sluffing.

Machine contact with the yarn is minimized, so that soiling of expensive fibres is avoided.

SEND FOR BULLETIN A-92-B. Learn about other quality features of the Foster Model 75, which cannot be described here, due to lack of space.

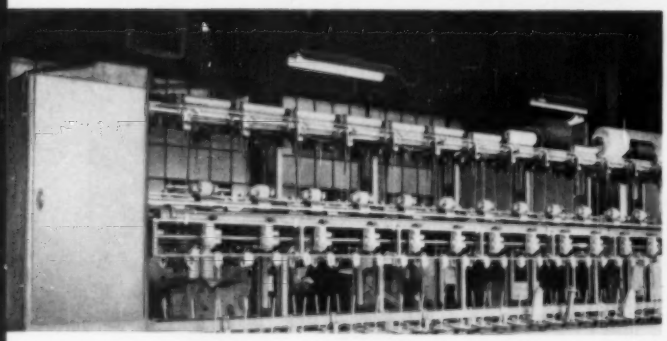


FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

Westfield, Massachuestts, U.S.A.

Southern Office — Johnston Bldg., Charlotte, N. C. • *Canadian Representative* — Ross Whitehead & Co. Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario *European Representative* — Muschamp Textile Machinery Ltd., Keb Lane Bardsley, Oldham, England.



Texturing Machine

A yarn texturizer with a 10-in. traverse that can handle 10-in.-dia. packages has been announced by U.S. Textile Machine Co., Scranton 8, Pa.

The machine has a positive chain-and-gear drive that delivers a uniform winding speed with only one change gear. Supply-package holders are angle-mounted spring tensions for easy doffing and automatic return to operating position.

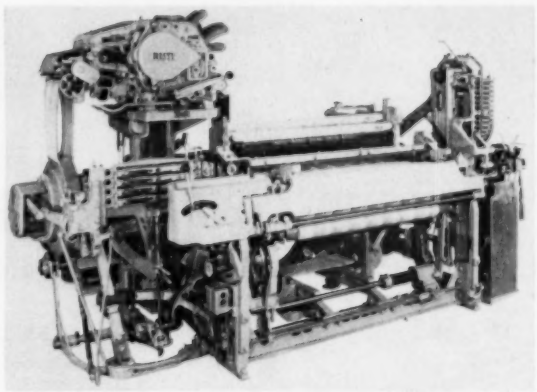
Feed-roll shafts have a variable overfeed control that can be adjusted by changing one gear. Dual air lines, valves, and gauges make it easy to insert texturing jets.

Circle T-7 on Reader-Service Card

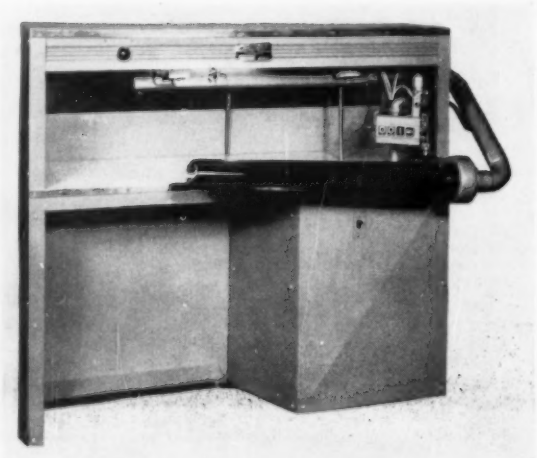
High-Speed Multishuttle Loom

A high-speed automatic bobbin-changing multishuttle loom developed by Ruti Machinery Works Ltd., Ruti, Zurich, Switzerland, has the following features:

1. A sturdy drop-box frame that does not require a picker rod; floating binders that extend the braking distance on shuttles; and binder releases on each side of the shuttle for easy picking of the shuttles.
2. Multidisk clutch; and gentle harness shedding from a bigger crank-arm throw.
3. Stoppage of the lay before beat-up when the filling stop motion stops; and withdrawal of the shuttles with a foot lever.
4. Mechanical reversing motion with the starting lever so that any lay position can be quickly obtained without turning the handwheel.
5. Stationary bobbin magazine that holds four colors of filling for a total of 60 bobbins.
6. Positive automatic let-off with constant unaltered tension from full to empty yarn beam.
7. A choice of harness motion cam, dobby, or jacquard. The dobby or jacquard can be furnished with either wood or paper patterns.



Circle T-8 on Reader-Service Card



Sock-Inspecting Machine

A sock-inspecting machine has been announced by Specialty Manufacturers & Sales Co., Acworth, Ga.; it is being sold by International Textile Machine Co., 430 N. Tryon St., Charlotte, N. C.

This model, S Inspectomatic, is available in either right- or left-hand machines of identical design. It stacks all types of socks accurately at high speeds, which lets it be used optionally as a straight turning unit.

The machine turns socks automatically and stacks them directly in front of the operator. Its over-all size is about half that of an average office desk.

Circle T-9 on Reader-Service Card

For more data, circle A-55 on Reader Service Card →

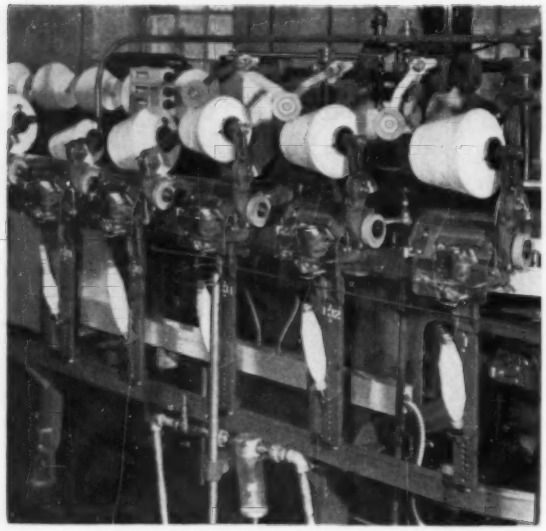
NEW ECONOMY FOR YOUR WEAVE ROOM

The Draper Automatic Filling Magazine brings new economy to your weave room, by reducing filling handling to a minimum. More continuous loom operation, cleaner yarns and fewer cloth seconds are direct advantages gained from the use of this magazine.

DRAPER CORPORATION

HOPEDALE, MASS.

ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.



Circle T-10 on Reader-Service Card

Knitting Cone Winder

A new knitting cone winder that produces 8½-in.-dia. cones has been introduced by Abbott Machine Co., Inc., Wilton, N. H.

New features include a retracting cam for the spindle and a nylon thread-traverse cam that has been speeded up to give quicker reversal.

The package arm has been redesigned, and the machine is equipped with a new cover plate and tension assembly. The yarn-guide wires make it impossible for the yarn to pass through the yarn guide without properly entering the tension. The yarn guide is made from flat steel to prevent yarn fibers wrapping around it.

Other features include a slub catcher with a swinging-blade action that severs the yarn whenever any imperfection or foreign matter engages the blade. The slub catcher can be adjusted to any desired setting from 0 to 0.050 in. or more with a special setting tool.

Used with the slub catcher is a yarn-waxing attachment that uses round wax blocks. The wax disk is held in position from overhead so that the yarn traverses completely across the under face of the wax. Traversing of the yarn across the face of the disk assures a thorough job of waxing and uniform reduction in thickness of the wax.

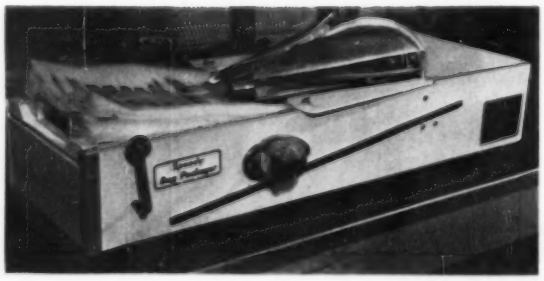
Color Analyzer

A color-analyzing instrument based on a spectrophotometer and a reflectance attachment has been announced by Bausch & Lomb Optical Co., Rochester 2, N. Y.

Samples to be analyzed for color are placed over an aperture, which is illuminated by a controlled light source. Reflectance readings are converted to standard C.I.E. trichromatic values by a chart supplied by the manufacturer.

The need for color filters is eliminated by a certified B. &. L. Diffraction grating that quickly provides light ct high spectral purity. Positive voltage regulation is provided by a specially developed power supply that operates without fluctuation on 50 or 60 cycles.

Circle T-11 on Reader-Service Card



Bag Packager

A bag-packaging machine that will open up to 1,500 bags per hour has been announced by Errich International Corp., 35 W. 36th St., New York 18. N. Y.

The unit will open bags 5½ to 11 ins. wide. Polyethylene, cellophane, glassine, kraft, or other plastic-film bags can be handled interchangeably. Feed tray and bag reservoir are made of nonmagnetic material to prevent static buildup on polyethylene films.

Circle T-12 on Reader-Service Card

Swift
104TH YEAR
To Serve Your Industry Better

S-33

• *Swift sells Soap* and prompt, courteous and resourceful *service* —from a wide network of Swift offices and warehouses located all over the country.

Your Swift man draws on experience that covers over a *half a century* of mill progress in the practiced skills of dyeing, fulling and scouring. That's why there's a Swift's Soap or Detergent for most any textile finishing job. Swift will help provide sure, skilled and *experienced* service *wherever* fine fabrics need the *right* treatment.

Ask your Swift man about the TITER TRIPLETS:

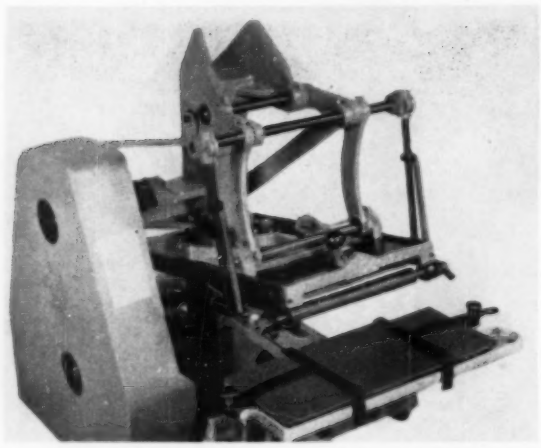
WHITE RIBBON (41°—42°C) A neutral high titer, all-purpose soap particularly recommended for high temperature sudsing. For wool, cotton or synthetic processing. Powder—92% anhydrous soap, Flakes—88% anhydrous soap.

T-25 (25°—28°C) Excellent for low titer fulling or for scouring fine or heavy worsteds. A neutral medium titer, red oil blended soap in flake form. Has 92% actual soap content.

VERTEX FLAKES (10°—12°C) Produced from high quality red oil. Quickly soluble in low temperature operations. Excellent for woolens. Provides good scouring at reduced steam costs. 94% actual soap content.

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

For more data, circle A-56 on Reader Service Card



Machine To Print Rug Labels

A machine to mark rugs with data such as wool content, quality, name, color, size, etc. is being sold by Markhem Machine Co., Keene 47, N. H. The compact machine can be mounted on a bench anywhere in a plant; over-all dimensions are 13x23x26 ins.

With the machine, large-size acetate-satin heat-seal rug labels can be neatly and uniformly made at 20 or more labels per minute. With bars, the maximum imprinted is 2⅞ ins. from front to back and 6⅛ ins. from right to left. By using rubber plates, the maximum imprint is 2¼x6½ ins.

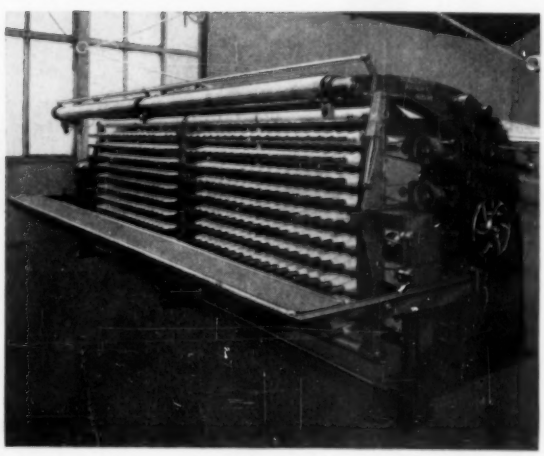
A wide variety of specialty inks is available in many combinations of colors and drying speeds for clear imprints on acetate satins and other materials.

Circle T-13 on Reader-Service Card

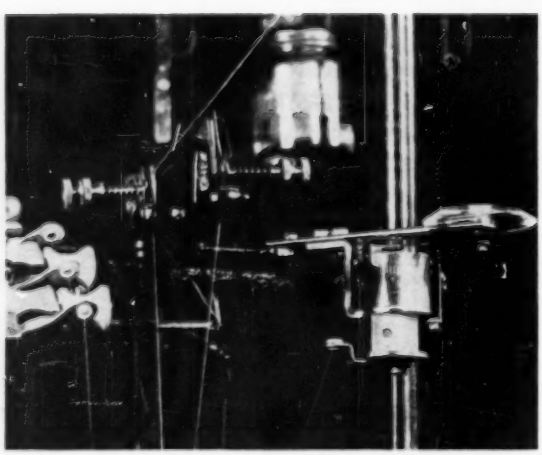
Warp Winder

The electromagnetic warp winder, Model N, built by Thomas Holt Ltd., Rochdale, England, maintains continuous control over yarn tension with speeds up to 350 yds. per min. Packages with 4¼-in. diameter hold 2½ lbs. of yarn.

An electromagnetic spindle keeps yarn breakages down. The yarn speed is infinitely variable from stop to full-running speed by a control bar. With this bar, the machine can be run at any speed at any time during the building of the package.



Circle T-14 on Reader-Service Card



Hosiery-Machine Control

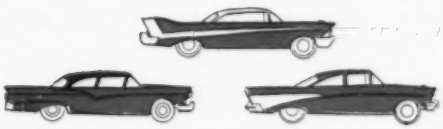
A tension control for women's seamless-hosiery machines. Telepathic Compensator, controls yarn as it is fed from the package to hold stocking lengths stable. The compensator is made by Crabtree Textile Accessories Ltd., Colne, Lancashire, England, and is sold and serviced in the U. S. by Knitrol, Div. of Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

In addition to its application for hosiery-length control and for checking various yarns and thread guides, the instrument is used in pairs on two-feed machines for equalizing tensions of the two yarns fed simultaneously.

Circle T-15 on Reader-Service Card

EQUIPMENT & SUPPLY NEWS

in automobiles,
it's "the big three"



In colored yarns it's

Franklin-Dyed

for:-

QUALITY

We dye exclusively on the Franklin compressible spring. This permits uniform density of packages, which promotes uniform penetration of the dye liquor and uniform shades.

SPECIALIZATION

Yarn dyeing is our specialty. We act as yarn merchants to get dyeing, but we don't dye to make yarn sales. Our 5 plants and our entire organization have but one objective—to provide the best yarn dyeing service available.

CAPACITY

With 5 dye plants, hundreds of package dyeing machines in dozens of sizes and winding equipment to match, we are literally the largest package dyers in the world — ready to dye all types of spun fibres in any quantity.

CONSULTATION

We can help you with your color problems. We have unequalled laboratory facilities, a staff of highly skilled technicians and unequalled experience in time, variety and volume which are at your service.

AVAILABILITY

Our 5 yarn dyeing plants, strategically located in 5 different textile centers, are conveniently yours. Contact our nearest plant or office.

X-ray view of Franklin Package, the "secret" of uniform shades. Don't say "package dyed". Say "Franklin-Dyed".

Franklin Process

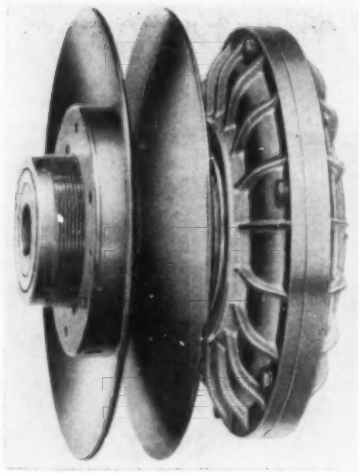
A DIVISION OF INDIAN HEAD MILLS

Dyers of cotton (carded, combed, mercerized) Orlon* (yarn & tow) Acrilan • Dacron** • Ban-Lon® • Helanca • Spun Nylon • Spun Rayon • Blends • Wool and Worsted yarn

Philadelphia • Greenville • Chattanooga
Fingerville, S. C.
New York Office — 111 West 40th St.
Providence Office — 611 Turks Head Bldg.

*Trademark for Dupont's acrylic fibre.
**Trademark for Dupont's polyester fibre.

FIBERS



"Soft-Start" Drive

An improved Flexidyne drive for roving, spinning, and twisting frames has been announced by Dodge Mfg. Corp., Mishawaka, Ind.

A variable-pitch sheave is combined with a 9D Flexidyne drive as an integral unit, and cushioned or "soft" starting can be provided in a range of pitch diameters from 5.5 to 10.

Pitch diameter is quickly changed by turning the sheave flanges upon the hub. Flanges turn together; right-hand and left-hand threads keep the center of the groove in the same position for all pitch diameters.

Advantages are soft starts, fewer ends down, uniform yarn, less downtime, less motor strain, and overload production. The power-transmitting characteristics of the drive can be varied to suit the application.

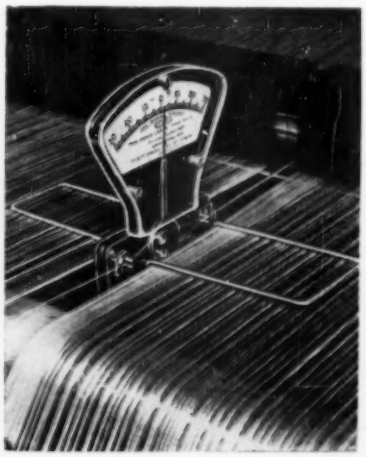
Circle T-16 on Reader-Service Card

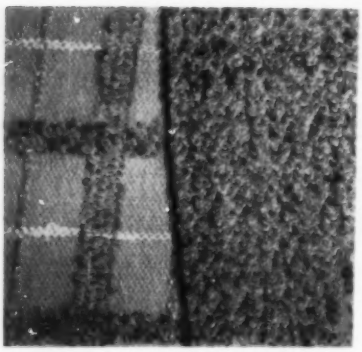
Yarn-Tension Transducer

The Manra yarn-tension transducer developed by the British Rayon Research Assn. and built by Louis Newmark Ltd., Croydon, England, is used for measuring yarn tension continuously. Peak tensions with short durations up to 0.01 sec. can be recorded.

The instrument has a three-pulley system with the center pulley mounted on a cantilever spring system; its movement under yarn tension varies the capacitance of the system. The transducer converts yarn tension into electrical capacitance and is used with an electronic unit capable of producing an electronic signal proportional to capacitance.

Circle T-17 on Reader-Service Card





Jersey Knitting Machine

A pattern-wrap circular-knitting machine that makes both sculpture-like and smooth designs in jersey fabrics has been announced by Scott & Williams, Inc., Brinton Fabrics Machine Div., Laconia, N. H. This company has been licensed by Vincent Lombardi to make the machine; and machine buyers will have a royalty-free license to make patented fabrics being produced on the machine.

The machine handles all natural and man-made-fiber yarns; and unusual effects are being made with metallic, knop, boucle, slub, mohair, and chenille yarns. It produces 6½- to 7-oz. jersey suiting, coating, swim suits, children's wear, and upholstery without any mechanical changes.

Circle T-18 on Reader-Service Card

Color Tester

An instrument that measures the color of raw cotton has been announced by Gardner Laboratory, Inc., Bethesda 14, Md.

Reflectance (R_d) and yellowness (+b) are automatically shown on a two-dimensional chart when the operator places a sample in place.

Cidcle T-19 on Reader-Service Card

The machine can be used to check materials other than cotton for reflectance and color.

Operators need little training.

CONTINUED ON PAGE 138

FIBERS

Textile World DECEMBER, 1958

FIBERS YARNS FABRICS

Fiberglas Prints

Printed Fiberglas fabrics for interior decorative uses have been developed by J. H. Thorp & Co. from Fiberglas Aerocor yarns.

First offerings include six printed fabrics ranging in price from $6.40 a yd. to $8.65 a yd.

Colors are said to be sharp and rich.

Carpet Nylon Staple

Crimped nylon staple fiber in 15 and 22 dens. for use in carpets was announced early last month by Industrial Rayon Corp.

Listed at $1.08 per lb. and available in bright and dull lusters, the fiber is adaptable to the cotton, woolen, worsted, and jute spinning systems. It is said to have greater bulk and processing flexibility than Industrial's previous nylon carpet staple.

Boys'-Wear Trends for 1959

Spring 1959 will bring some important swings in fabrics and colors for boys' wear, according to the Boys' Apparel & Accessories Mfrs. Assn.

Outerwear—The trend is away from plaids and toward solid colors with matching knitted-fabric trimmings. Expensive fabrics will be in subdued colors, but lower-price and medium-price outerwear will have sharp color contrasts.

Trousers—Wash-and-wear finishes are growing more important. Dress trousers will be in darker shades; but casual-wear slacks will be in bright, "off-beat" colors.

Knitted sport shirts—The collar model will account for about one-half of the total market. The other one-half will split 40% for the crew style and 10% for high novelties. Colors will tend toward polished blues, antelope, and olive.

Sweaters—The bulky knits and boat neck will hold. Colors will be white, red, gold, and blue, with contrasting or flattering trims.

Cut-and-sewed shirts—Neat and subdued colors in foulard and paisley themes will be mostly in medium and dark shades.

Mink-Like Fabric

Collins & Aikman has been granted U. S. Patent 2,857,652 covering the manufacture of a simulated-fur fabric called Wink from a blend of acrylic and polyamide fibers. Wink is said to be the nearest resemblance to mink yet made from textile fibers.

The new manufacturing method is said to produce a lower underpelt of fur-like character and longer guard hairs to give Wink a true mink appearance. The process also gives pelt breaks to simulate the joining of individual mink pelts in a garment.

New Orlon-Corval Fabric

A new wash-and-wear fabric called Sangaree is being introduced by Milliken and Courtaulds in a joint promotion campaign geared to spring sales.

The lightweight, 6½ to 7 oz., worsted-type fabric is made of 50% Orlon and 50% Corval, Courtauld's new cross-linked cellulosic fiber. It is described as crisp but soft and said to be cool and to have good pleat retention and wrinkle resistance.

Sangaree is a yarn-dyed fabric woven in herringbones, checks, and small over-all effects. Dress patterns include pink, green, turquoise, lilac, orange, and curry.

Lowenstein Spring Prints

The Belaire Div. of M. Lowenstein & Son's 1959 spring and summer prints, introduced last month, feature strong colors in both flat and textured fabrics.

Feature prints included:

Signature—a silky, combed-cotton, easy-care fabric in designs ranging from brilliant florals to soft pastels. Some of the patterns are printed on natural grounds.

Saturna—a cotton satin with a new soft hand in designs of soft blues and greens traced in black and tone-on-tone florals.

Belaire—the basic range of print cloths offered every year. Special designs this year include exotic Oriental flowers, French stylized flowers and fruits, and Old World tapestry effects.

Hopsaque—an all-cotton hopsacking with a hand-woven look in impressionistic, tapestry, and floral designs.

Dow's Fiber 957

Dow Chemical Co.'s Fiber 957, soon to be trademarked, is now on display in the company's research house at South Bend, Ind., as a wall-covering material.

The fiber and the wall-covering fabrics are still in the experimental stage and are not yet commercially available.

Nonwoven-Fabric Potentials

Growth potential for nonwoven fabrics looks particularly good in:

Wall coverings. The market could hit 1-billion yds. a year.

Interliners. Garment manufacturers can now get garment linings with special properties to suit the garment use.

Furniture. Bonded nonwoven pads were recently introduced for use with foam-rubber cushion cores.

Other uses with great potential are quiltings, pillow filling, tufted throw-rug backings, auto-door panels and headliners, and luggage, according to B. F. Goodrich Chemical Co.

FIBERS YARNS FABRICS

Multicolor Glass Fabrics

Multicolor glass-fabric curtains and draperies that stress the woven texture of the fabric are now produced by a process developed by Hess, Goldsmith & Co., a member of Burlington Industries.

Trademarked Dy-Cor, these products and the Hess, Goldsmith process will be protected by a patent now pending.

Mothproof Carpets

Archibald Holmes & Son is extending the use of its wool-carpet mothproofing process called Moth-a-Nil to its whole carpet production, effective Jan. 1, after six months of trying it on various grades of carpeting.

The moth protection is said to be permanent for the life of the carpet. Tests indicate that the chemical remains in the carpet in doses lethal to moths after several years of actual carpet use and after 20 shampooings.

Fabric Collapsible Tank

Nylon fabric coated with a synthetic-rubber compound is now being used to make collapsible tanks to transport liquids on farms, Firestone Tire & Rubber Co. announced.

Called Fabritank, the collapsible tank is mounted on a stake truck, filled with a liquid (water, spray, liquid fertilizer, etc.), and hauled wherever it is needed.

The tank weighs 225 lbs.; and when full, it measures 6 ft. wide, 2½ ft. high, and 12½ ft. long.

Upholstery Fabric

U. S. Rubber Co. is introducing a new line of upholstery with vinyl designs anchored to soft woven fabric. The new upholstery, called Pace, features a nonrepeat random vinyl design on fabric, with a silver print accenting the random pattern. It has a woven look and is said to be porous, soft, and easy to tailor and clean.

Pace is an addition to the company's Naugaweave line and is being introduced in 10 colors: tangerine, sandalwood, green olive, shadow gray, antique white, sand, mustard, ginger, espresso, and cerulean. It is 54 ins. wide and will be sold in 30-yd. rolls through distributors and direct to volume furniture manufacturers.

Sock-Display Box

A new rack-display packaging method for stretch socks is being used by Ma-Ro Hosiery Co.

The back of the usual sleeve-type package is cut out to show the full sock style; but the front of the box is illustrated with a full-size, full-color photograph illustrating the appropriate occasion for wearing the socks. Near the bottom of the photograph, a small sock-shape hole is cut out to show the sock fabric.

Fabric for Jackets

R. G. Fromkin Textiles introduced a new sports outerwear fabric of 50% wool and 50% Acrilan said to have excellent washability characteristics.

The fabric is in the "luxury" class and has good strength, shape-retention, and long-wear qualities.

Chief use expected soon is in suburban-type jackets.

Nonwoven Towel

Chicopee Mfg. Co. is introducing a counter towel of rayon nonwoven fabric for use in schools, hospitals, restaurants, and other retail food and beverages service establishments.

Called Miracloth, the fabric is said to look like woven cloth, to have good water-retaining capacity, to be lintfree, and to have good wet strength.

Part of Chicopee's introductory promotion is a "Spin and Win" contest held in conjunction with the National Restaurant Assn.

Cotton-Cupioni Tests

Wash-and-wear fabrics and garments made of cotton and American Bemberg's Cupioni fiber will bear a special wash-and-wear seal of the U. S. Testing Co. in a new testing and labeling program initiated by Bemberg.

Fabrics will be tested for wrinkle tendency and recovery, puckering tendency, and crease resistance. Garments will be tested for seams, tapes, linings, and accessories.

Over 35,000,000 garments of widely different types will be made of cotton and Cupioni in 1959, U. S. Testing says.

Fabric With Laminated Foam

Fabrics with garment interlinings of urethane foam laminated to them for garment use are now being supplied by three mills: Burlington, McCampbell, and Spinco Fabrics (subsidiary of Cone Mills), Scott Paper Co., maker of Scott-Foam, announced. The urethane foam is being laminated to both woven and knitted fabrics of cotton and man-made fibers.

The laminated foam is said to breathe, drape, and insulate well and to remain soft and pliable in the garment.

Courlene X-3 Output Increased

Courtaulds Ltd. is doubling production capacity for Courlene X-3 polyethylene yarn at the Coventry plant of its subsidiary British Celanese Ltd.

Expansion, to be completed early next year, will increase the proportion of multifilament yarns produced at the plant. Present production is chiefly in monofilament.

Courlene X-3 is used chiefly for industrial applications such as ropes and twines, filter fabrics, electrical interlinings, etc.

Taslan Yarn in Shoes

Taslan textured nylon yarn has moved into a new use: thread for inseaming of shoes.

Advantages cited by Du Pont for the textured-yarn thread in this use are better wax pickup, better last-stitch holding, and a tight hinge.

upholstery and drapery fabrics *look better sell better* touched with glittering...

FAIRTEX® YARNS

METALLIZED MYLAR* • METALLIC • SUPPORTED METALLIC

Fairtex with Foil or Metallized Mylar* or Fairtex Butyrate Metallic yarns woven into your upholstery and drapery fabrics add the luxury look!

They look better and sell better because the vibrant beauty of Fairtex Metallics stops the eye and starts the sale!

Fairtex Yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured.

As "soft-as-silk" to the touch, they are smooth, pliable and uniform and do not flake or break.

Fairtex Yarns never lose their glittering glamour and outlast even the fabric itself!

*Registered Trademark for Dupont's Polyester Film

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CHICAGO
William Napier, 3555 Peterson Avenue

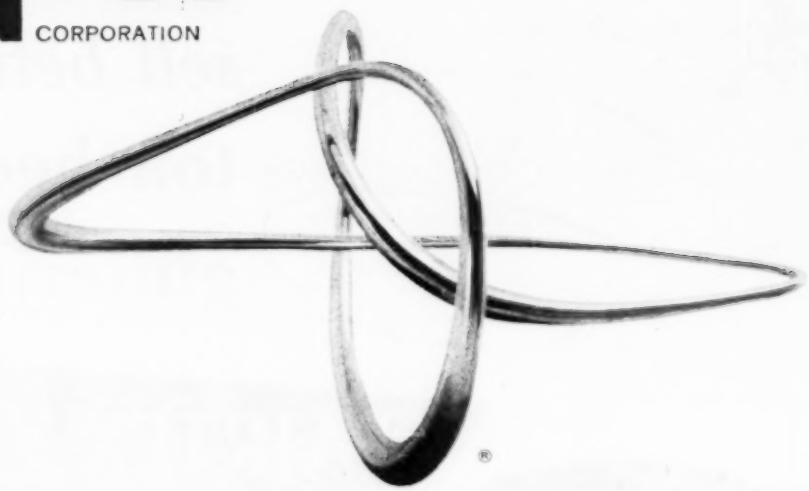
JENKINTOWN, PA.
William A. Popp & Associates, The Benson-East

ATLANTA
Robinson Textile Co., 3133 Maple Drive, N.E.

2953

PRODUCTS OF THE

AMERICAN ENKA CORPORATION



Enka—symbol of quality and service in man-made fibers

TEXTILE RAYON YARNS

- Natural continuous filament rayon yarns
- JETSPUN® solution-dyed continuous filament rayon yarns
- SKYLOFT® lofted natural and solution-dyed continuous filament rayon yarns

RAYON STAPLE FIBERS

- Textile staple • High crimp carpet staple

INDUSTRIAL RAYON YARNS

- High-tenacity filament rayon yarns
- Superior-tenacity filament rayon yarns

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- Continuous filament yarns • Staple fibers

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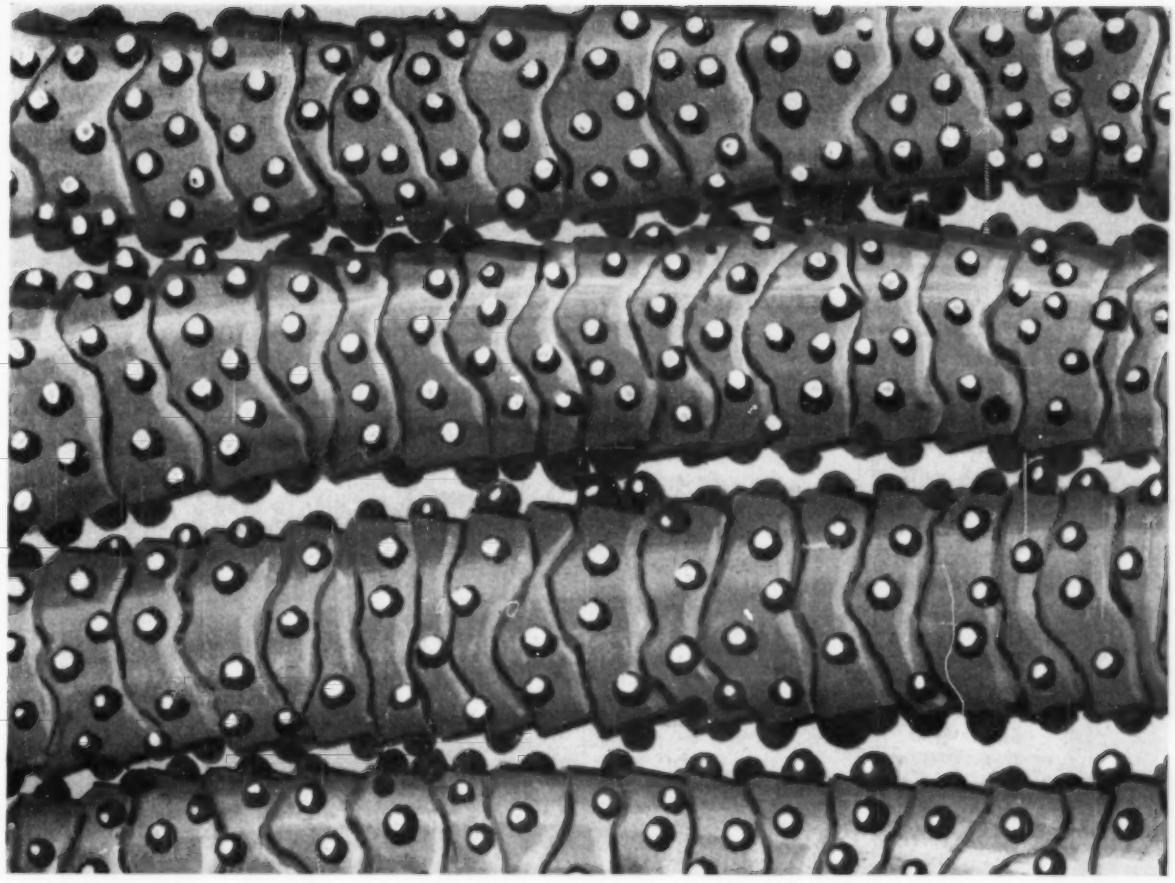

Millions of submicroscopic particles of Syton increase interfiber drag, hold fibers in place, enable you to spin finer yarns.

You can get finer yarns from coarser stocks with SYTON

SYTON —T. M. Monsanto Chemical Co.

Check these 10 advantages you get with Syton:

- High interfiber drag
- Fast, easy carding—reduces harmful effects of static electricity
- Lighter, finer counts from coarser fibers
- Less twist for the same strength
- Fewer ends down
- More uniform, condensed rovings
- Higher spinning speeds
- Increased tensile strength
- Improved color
- Improved processing of 100% synthetic fibers on woolen systems

SYTON is an odorless, translucent, pH-stable silica sol for use alone or with other finishes. It distributes uniformly; requires no special equipment, after-treatment or curing. It is highly resistant to dry cleaning yet removes easily from stock by mild scouring.

Monsanto Technical Bulletins tell all about Syton in textile finishing. Request one from your local Monsanto representative, or write: MONSANTO CHEMICAL COMPANY, Inorganic Chemicals Division, Lindbergh and Olive Street Road, St. Louis 24, Missouri.

Monsanto

Where Creative Chemistry Works Wonders For You®

#3 of a series:

caprolan® TEXTURED YARN SEMINAR

2 WAYS TO AVOID CREELING PROBLEMS

Is your mill one of the forward-thinking plants now running textured filament yarns? Then you know the importance of this fact:

FACT: Textured Filament Yarns And Spun Yarns Are Not The Same

Consequently, your ordinary methods of running spun yarns need certain adaptation to attain maximum success with the amazing new textured filament yarns. For example: Vertical creeling of textured filament yarns can lead to a considerable amount of sloughing off if proper precautions are not taken.

Because the fiber ends are essentially smooth, they will slide down the body of the package when the yarn is relaxed. As the machine starts up again and the slack is eliminated, the cone may be lifted off the arbor. You can easily avoid this problem by either of these simple techniques:

1. One effective way to prevent sloughing is to place a piece of carpet under the yarn package with the bottom of the cone passing through the carpet and the coned yarn resting on the pile of the carpet. Thus, the relaxed yarn will rest on the carpet and will not be able to unseat the cone.

2. Another method is to re-install the arbors so that the cones will be horizontal rather than vertical. The relaxed yarn will then run freely from the package without sloughing. Post tension devices will help control uniform yarn delivery.

We are eager for you to get the best possible results when adapting Textured Caprolan* to your product lines. Our technical service, end-use development and fiber application laboratory staffs are always available to help you and to answer any questions. Call us any time.

*Trade Mark—Allied Chemical's polyamide fiber

Allied Chemical

Fiber Sales and Service *National Aniline Division*
261 Madison Avenue, New York 16, N. Y.

WHAT YOU SHOULD KNOW ABOUT STARCH*

STARCH COOKING equipment

These Are Some Of The OK BRAND Products Especially Engineered To Meet Specific Textile Mill Requirements

OK—HUBFILM
OK—HUBCOLOR
OK—WAXYFILM
OK—PRINTEX
OK—KEOTAC (cationic)

Today's demands for higher slasher production coupled with the demand for higher quality warps is placing a greater responsibility on the size maker. The only way that he can do his job is to have at his disposal the materials and equipment necessary.

In recent years the corn refining industry has made great strides in supplying a uniform quality starch at reasonable costs for size preparation. However, no matter how good the starch, if it is not handled properly, full benefits can not be secured.

Properly designed cooking and storage kettles are important. The kettles should be constructed of rust-proof material with sides and bottom well insulated against heat loss. Congealed size remaining in a cooking kettle after it is drained is the result of improper cooking, which in turn, is the result of insufficient temperature or agitation, or both. Since heated substances always rise, emphasis should always be placed on having the cooking kettle bottom well insulated. Insulation returns a substantial dividend on the investment involved.

The bottoms of the cooking and storage kettles should be slightly dished. The drainage outlets should be at the lowest point of the bottom for complete drainage. Today's modern size kettles are equipped with motor driven agitators. The cooking kettle agitator speed is 45-65 rpm. The storage kettle agitator speed is 15-20 rpm. The slower speed in the storage kettle is required to minimize reducing the size viscosity. There are two agitators per kettle turning in the same direction on a single shaft. The bottom agitator should run as close to the kettle bottom as possible. In the cooking kettle it would be well to have the bottom agitator turning inside the steam coil. The heights of the top agitators are adjusted so as to run well below size surface level. The steam coil in the cooking kettle is perforated to admit live steam. The steam coil should be not over three inches from the bottom. The steam perforations should point slightly downward toward the center of the kettle. On heavy size batches air may be connected to the steam coil as an aid in mixing the size.

The steam coil in the storage kettle is of the closed type to prevent size dilution by steam condensation. The temperature of the stored size is maintained at 190-206° F.

The cooking kettle should be of sufficient capacity to allow twelve to eighteen inches space between finished size level and top of the kettle. This prevents boil over. It is a good idea to have the storage kettle one and a half times larger capacity than the cooking kettle to allow for an operating inventory of prepared size.

Automatic controls for cooking, as well as automatic temperature control on the storage kettle, will greatly aid in preparing and maintaining uniform size from batch to batch. The cooking kettle controls consist of a recording thermometer controller, a timer for controlling time of cook and a "start-stop" push button station. These controls are equipped with signal lights to denote phase of operation. It is good practice for the operator to daily check the controls for proper operation. All size lines from storage to size boxes and cooking to storage should be rust-proof and 2 inches I. D.

It is helpful to have the storage kettle as near as possible to point of use so as to reduce length of size lines. These lines must be well insulated and equipped with steam connections for blowing out.

90° elbows should be kept at a minimum as they greatly increase flow resistance.

* ONE OF A SERIES OF ARTICLES, FOR THE COMPLETE SET AND FOR OUR CONTINUING TECHNICAL DATA SERVICE, WRITE WITHOUT OBLIGATION TO:

The Hubinger Company

HUBINGER 77 YEARS

601 Main Street
KEOKUK, IOWA

Sales Representatives: IRA L. GRIFFIN AND SONS · Charlotte, N.C.

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Celanese

to

support

Celanese

For more data, circle A-63 on Reader Service Card

pulent fabrics for fall '59

Satins, crepes, failles and moires important trend setters

All advance fashion reports indicate a strong return to peaus, brocades, satins, crepes, failles, moires, and other opulent look fabrics. This is true both in Paris and New York.

Because Celanese acetate and Celaperm acetate are vital to these highly styled fabric constructions, Celanese will support all opulent look fabrics containing Celanese fibers with a broad promotion for fall '59. This promotion is designed to help sell at all levels—mill, converter, cutter, and retailer.

What does this mean to you?

Celanese will help promote your opulent look fabrics by doing the following.

1. Obtain from your converter customers a list of all manufacturers sampling your opulent look fabrics.
2. Supply all manufacturers with showroom displays and hang tags for their garments.
3. Show samples of these fabrics to hundreds of manufacturers through the Celanese Market Liaison Department.
4. Supply all manufacturers with a list of the participating retail stores.
5. Supply your converters with showroom display pieces showing their participation in the promotion.
6. Invite magazine, trade paper, and newspaper editors to see your fabrics at the Celanese Fabric Library.
7. Line up about 100 important stores in key U. S. cities as retail headquarters for the promotion. This means newspaper ads, windows, displays, and fashion shows on garments cut from your fabrics.
8. Supply all participating store buyers with a complete resource list of manufacturers in time for Market Week.
9. Advertise opulent fabric categories to the manufacturers.
10. Supply all participating retail stores with a complete selling kit.
11. Send Celanese representatives to stores to hold sales training meetings, narrate fashion shows, and act as retail consultants to consumers.
12. Run multiple page consumer ads featuring merchandise made from opulent look fabrics, complete with retail store listings.

How can you participate?

All you have to do to participate is to make opulent fabrics containing Celanese yarns, and supply Celanese with the names of the converters buying these fabrics.

What fabric categories are included?

Taffetas, satins, peaus, crepes, failles, ottomans, and brocades. Contact your Celanese representative for further information:

DISTRICT SALES OFFICES:
180 Madison Ave., New York 16, N. Y.
Room 10-141 Merchandise Mart, Chicago 54, Illinois.
P. O. Box 1414, Charlotte 1, N. C.
200 Boylston St., Chestnut Hill 67, Mass.
819 Santee St., Los Angeles, Calif.

EXPORT SALES: Amcel Co., Inc., and Pan Amcel Co., Inc.
180 Madison Ave., New York 16, N. Y.

IN CANADA: Chemcell Fibres Limited,
1600 Dorchester Street West, Montreal, Quebec.

Celanese® Celaperm®

contemporary fibers

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THE NEED: New-type, lightweight shrinking cone for nylon.

The customer problem was three-fold: (1) the need for a 3°30′ cone that would provide uniform shrinking of nylon yarn, (2) eliminate staining of yarn in the process, (3) and, the elimination of yarn slippage in primary winding upon delivery.

Sonoco engineers solved this problem by first developing an especially constructed, lightweight 3°30′ cone that provided even, controlled shrinkage. Yarn staining was eliminated by the use of special Sonoco-manufactured white paper that was used as the stock for this cone. Finally, Velvet bands were applied at the cone point and base to prevent wasteful yarn slippage. The result: customer satisfied.

Only Sonoco, with its modern laboratory, engineering and production facilities, could solve this problem economically and efficiently. It is typical of countless cases where Sonoco leadership in the progressive development of textile paper carriers, based on 60 years of experience, has benefited the industry. Let Sonoco help you!

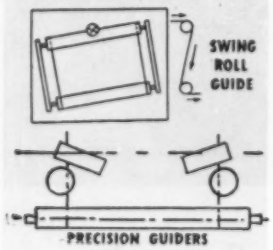
SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

Main Office—Hartsville, S. C. • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.

THE ONLY COMPLETE LINE OF GUIDING EQUIPMENT for ALL TEXTILES, PAPER, FOIL and PLASTICS. A model for every requirement.



UP GO QUALITY and PROFITS when you equip your process lines with MOUNT HOPE FLOATING ROLL GUIDES.

They **CORRECT WITH SPLIT-SECOND PRECISION** any tendency of moving material to run out of alignment.

SENSING FINGER provides ONE-EDGE "Kiss-Touch" ALIGNMENT CONTROL with no damage to edge or selvage. Also available with jet air sensing element for materials that cannot be touched.

SEPARATED ROLLS ASSURE "NIP-FREE" ACTION — no nipping, jerking, pulling or stretching of material.

REDUCE "SECONDS" SUBSTANTIALLY — by minimizing marred selvages, displaced warp threads, damaged nap or distorted edges.

For proof of the effectiveness of the exclusive features found only in MOUNT HOPE FLOATING ROLL GUIDES, mail the coupon below for more information.

MOUNT HOPE MACHINERY COMPANY
50 Fifth St. Taunton, Mass.

FOR THE CONVINCING FACTS — MAIL THIS COUPON NOW!

MOUNT HOPE MACHINERY CO.
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Please send more information on MOUNT HOPE GUIDERS.

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COMPANY _____

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NEW LITERATURE

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Fiber opener—For cotton, man-made fiber, and wool is the subject of a bulletin from Cen-Tennial Cotton Gin Co. (F-1)

Waste machine—That requires less space and cuts cost of reclaiming waste is the subject of booklet from Kirkman & Dixon Machinery Co. (F-2)

Take-up machine—Designed for filament-yarn production is described in bulletin from Universal Winding Co. (F-3)

Open-type creel—For spinning frames is offered in a bulletin from Parks-Cramer Co. (F-4)

Automatic filling quiller—Is described in a pamphlet from Terrell Machine Co., Inc. (F-5)

Antifriction coiler—Is the subject of a bulletin available from Saco-Lowell Shops. (F-6)

Magnetic clutches and brakes—For application in light machinery and equipment are announced in a bulletin from Dunamatic Div., Eaton Mfg. Co. (F-7)

Cooling coils—Complete coil-selection information is contained in bulletin released by American Air Filter Co., Inc. (F-8)

Automator unit—To provide d.c. variable-speed drive from an a.c. network is shown in a bulletin prepared by Marathon Electric Mfg. Corp. (F-9)

Flow switches—Are described in bulletin published by McDonnell & Miller, Inc. (F-10)

Flow meters—Two new magnetic flow meters that permit measurement of full-scale flow rates as low as 0.1 gal. per min. are featured in bulletin from Foxboro Co. (F-11)

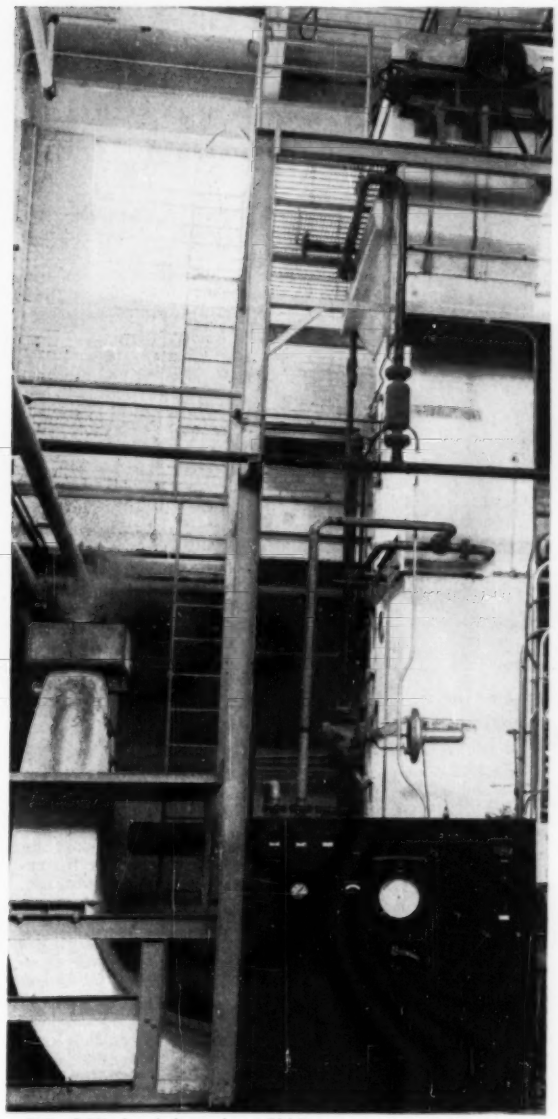
Mercury switch—That weighs only 1.8 grams with leads attached is introduced in booklet from Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-12)

Deaerating heater—Bulletin filled with specifications and diagrams is available from Graver Water Conditioning Co. (F-13)

Laboratory appliances—Are described in a new 1,040-p. catalog offered by Fisher Scientific Co. (F-14)

Heaters—Specifications and operating information on heaters and heating devices are contained in 52-p. booklet from General Electric Co. (F-15)

Another mill converts to the exclusive Solo-Matic Bleaching Process . . .



OLD J-BOX, already in service at Old Fort, was economically adapted to the improved Du Pont-type J-box through help and advice of a Du Pont Technical Representative.

Old Fort Finishing Co. saves floor space, improves bleaching quality of cotton broadcloth and piece goods

Now . . . over twenty-five mills are cutting costs and speeding production with the exclusive Solo-Matic Bleaching Process, available only from Du Pont!

Latest addition to the list is the Old Fort Finishing Co., Old Fort, N.C.—well-known producer of cotton broadcloth, print cloth and piece goods. Old Fort changed from 4-step caustic-chlorine batch bleaching to the simpler, more effective Du Pont Solo-Matic Process . . . cut floor space and processing time significantly. Bleaching quality improved—and with it uniformity in dyeing and finishing.

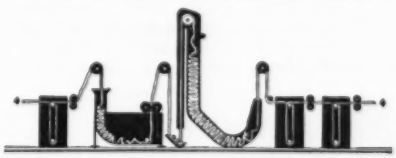
Your bleaching dollar goes further with Solo-Matic

Du Pont's Solo-Matic Process can help you save production and utilities costs as it has for so many mills. It can *double* your production in the same floor space, or maintain the same production in *half* that space with either new or existing equipment. In any case, you can count on improved brightness, fullness and uniformity in your product. Why not get all the facts about Du Pont's exclusive single-stage process? Just get in touch with your Du Pont Representative, or write us. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

DU PONT
REG. U.S. PAT. OFF.

ALBONE® hydrogen peroxide

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



Du Pont's Solo-Matic process—the most advanced single-stage hydrogen peroxide bleaching process available

DON'T CONFUSE THE SOLO-MATIC WITH ANY OTHER PROCESS!

Other processes may *sound* similar, but there is *only one* Solo-Matic Bleaching Process and it was developed by Du Pont. It is essentially a chemical technique that can easily be adapted to any existing or new continuous peroxide bleaching installation. The Du Pont Solo-Matic Process is helping more than twenty-five well-known mills improve bleaching quality, cut costs.

For more data, circle A-68 on Reader Service Card

NEW D&F "FRAME RECORDS" TELL
Improved Spinning Production Story

- Reduced cost per pound
- higher speeds
- more uniform tension
- less downtime
- less doffing

Get the facts on the New D&F Design Features
Ask for "D&F NEWS QUICK REVIEW"

Compare your own spinning room records with conservative figures offered by a typical cross section of progressive mills in a recent Davis & Furber mill survey. The story of *New Design Features and their operation* on the Davis & Furber Model F and G Ring Spinning Frames is one of *flexibility in design and application.* It makes these D&F Models adaptable to individual Mill Management Production Improvement Plans — to stock and blend specifications — to proposed investment budget limitations — to proposed cost-per-pound reduction plans.

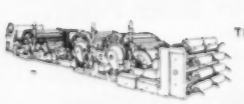
Facts have been outlined for you in **the new D&F News Quick Review.**

FIVE PROOFS in this QUICK REVIEW

1. **Present acceptance and use in Mills.**
2. **Comparative production figures.**
3. **New design features.**
4. **Modernization of Existing Frames.**
5. **An invitation to prove this "Improved Production" on your own roping with D&F New Demonstrators.**

Davis & Furber can offer a Production Improvement Plan for *your* mill. That's where the advice and counsel of D&F "Coordinated Production" technicians follows through. To get (a) *published proof* of latest production results, plus (b) *specific proof* (per item 5) tied to your present production results, act at once. Call or write now and let us schedule you for a *Presentation of your future yarn production schedule.*

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
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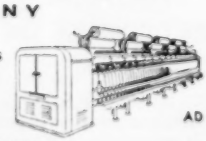

AD 13-2

Member — American Textile Machinery Association

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SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

SUPPLIES & CHEMICALS

Solvent—A chemically neutral liquid having high solvent power for vat and acid dyestuffs is the subject of a revised bulletin from Union Carbide Chemicals Co. Div., Union Carbide Corp. **(F-16)**

Organic chemicals—Are the subject of a booklet offered by Chemical Div., Armour & Co. **(F-17)**

Polyurethane elastomer—Booklet describing characteristics and applications offered by Dunlop Tire & Rubber Co. **(F-18)**

Astonized finish—On man-made-fiber fabrics is the subject of technical bulletin released by Onyx Oil & Chemical Co. **(F-19)**

In-line pH control—For continuously pressurized processes is described in data sheet from Beckman Scientific & Process Instruments Div., Beckman Instruments, Inc. **(F-20)**

Anionic surfactants—Are the subject of a brochure offered by Antara Chemicals Sales Div., General Aniline & Film Corp. **(F-21)**

Polyvinyl acetate—Seven data sheets on emulsions, solutions, and dispersions are published by Borden Chemical Co., Polyco-Monomer Dept. **(F-22)**

pH measurements — Techniques for making accurate pH measurements in soils, emulsions, suspensions, and oils are covered in data sheet issued by Beckman Scientific & Process Instruments Div., Beckman Instruments, Inc. **(F-23)**

Thermometers—A booklet describing complete line of stainless-steel thermometers is offered by W. C. Dillon & Co., Inc. **(F-24)**

10 top 1959 colors—Predicted in a summary of an analysis of consumer color preferences since 1946 by Monsanto Chemical Co.'s Plastics Div. **(F-25)**

Chemical process equipment—Booklet describing blenders, vacuum tumble dryers, and process heat exchangers is offered by Patterson-Kelley Co., Inc. **(F-26)**

Polyvinyl alcohol—That can be dissolved in cold water is the subject of a bulletin prepared by Colton Chemical Co. Div., Air Reduction Co., Inc. **(F-27)**

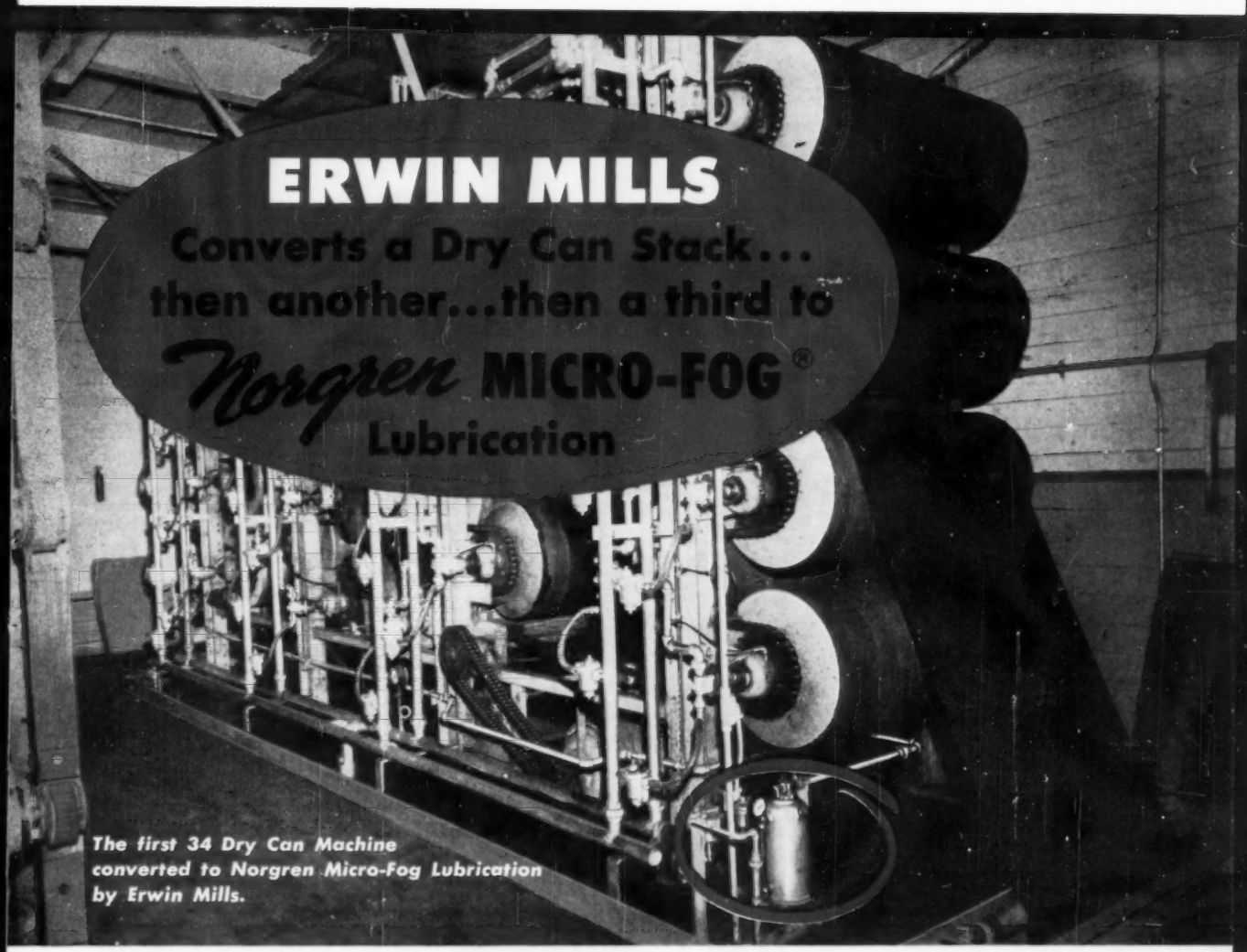
Degreaser—That cleans everything in industrial plants from conveyors to washrooms is described in bulletin available from Harco Chemical Co. **(F-28)**

MAINTENANCE & ENGINEERING

V-belts—Are the subject of a folder offered by Gates Rubber Co. **(F-29)**

For more data, circle A-69 on Reader Service Card

For more data, circle A-70 on Reader Service Card →



The first 34 Dry Can Machine converted to Norgren Micro-Fog Lubrication by Erwin Mills.

Norgren **MICRO-FOG®** Application Highly Profitable to ERWIN MILLS

- **Bearing Failures Eliminated**
- **No significant bearing wear in 12 months operation**
- **Bearing temperatures reduced approximately 10° F**
- **Uneven drag on bearings due to over or under lubrication eliminated**
- **Hand lubrication of bearings ended**
- **No more lubricant dripping from bearings**
- **Considerable saving in lubricant costs**
- **Substantial savings in maintenance costs**

At Erwin Mills, Inc., in Cooleemee, North Carolina, lubricant seepage from the bearings became a problem on the cylinder drying machines. Cleanup was costly, each bearing had to be greased by hand, lubrication was unsatisfactory and lubricant was wasted.

In the fall of 1957, MICRO-FOG was installed on a stack of 34 dry cans. During the months that followed, results were so outstanding that they decided in April, 1958, to make the same conversion on another stack of 36 dry cans. After repeated success, a third application of Norgren MICRO-FOG was made to another dry can stack in July. Total results have amounted to a big saving in maintenance time and money, a reduction in lubricant costs, and better lubrication for the bearings.

If it's Norgren...It's Dependable.

For complete information about this installation call your nearby Norgren representative listed in your telephone directory—or WRITE FACTORY FOR BLUEPRINT MF-27.

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IN TEXTILES "made in U.S.A."
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YOU CAN REDUCE YOUR COST

. . . you can process more yards per penny spent for rolls IF you will use the S-W ROLL-GUARD Plan.

We invite you to make your local S-W representative prove this in your mill, on your machinery, this month.

STOWE-WOODWARD, INC. Griffin, Georgia · Newton Upper Falls, Mass. · Neenah, Wisconsin

NEW LITERATURE Continued

Hydraulic packings—Catalog and ordering data on packings and fluids is available from E. F. Houghton & Co. (F-30)

Floor-finish specifications—Revised specifications for maple floors are contained in folder from Maple Flooring Manufacturers Assn. (F-31)

Polyvinyl-chloride pipe and fittings—Described in manual from Carlon Products Corp. (F-32)

Aluminum conduit—Booklet outlining mechanical and electrical advantages of aluminum conduit is offered by Aluminum Company of America. (F-33)

Steel bars—That offer new application opportunities are the subject of a report available from La Salle Steel Co. (F-34)

Slotted angle—Assembly instructions for forming framing material into a wide range of storage, materials handling, and maintenance structures are given in a booklet from Acme Steel Co. (F-35)

Fabricating facilities—Are the subject of a booklet published by Taylor Fibre Co. (F-36)

Welding supplies—Booklet on welding supplies and accessories is offered by Air Reduction Sales Div., Air Reduction Co., Inc. (F-37)

Thermocouples—Booklet with description and specifications is available from Bristol Co. (F-38)

Surface maintenance—Care and maintenance of a variety of surfaces is described in bulletin from National Sanitary Supply Assn. (F-39)

Dust collector—Bulletin describing performance curves and filter for removal of collected slurry is available from Joy Mfg. Co. (F-40)

Water conditioning—A 40-p. booklet describing various methods of water treatment is offered by Cochrane Corp. (F-41)

GENERAL

Pallet storage—Elimination of manual handling of empty pallets and reduced space requirements are described in bulletin from M-H Standard Corp. (F-42)

Freight cart—With replaceable deck is the subject of a circular from Lewis-Shepard Products, Inc. (F-43)

Casters—Brochure describing several popular numbers is offered by Payson Mfg. Co. (F-44)

Radiation hazards—Are dealt with in safety guidebook published by Association of Casualty & Surety Companies. (F-45)

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REINER

offers 2 outstanding clothroom machines

Menschner

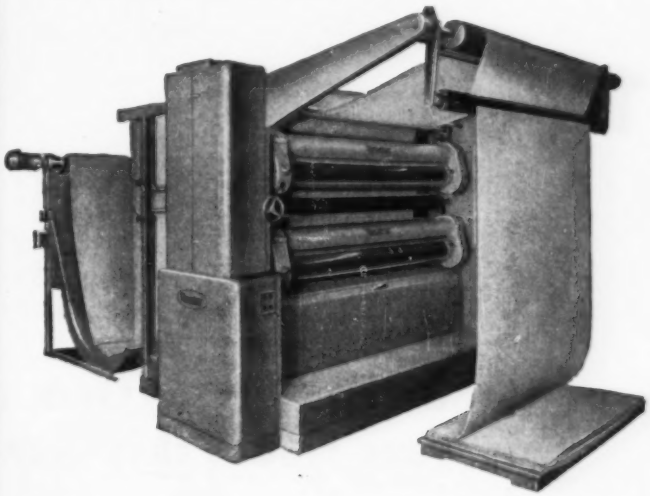
HIGH SPEED BRUSH & SHEAR (Model SPS) — one machine providing 3 operations:

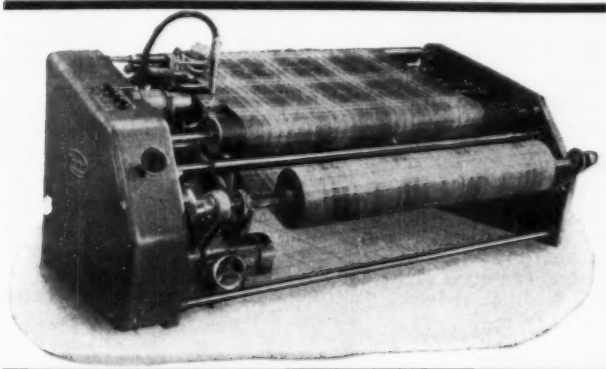
LOOP OPENING—BRUSHING & CLEANING — VERTICAL SHEARING with J-Box for continuous operation)

Features:

- Automatic Loop Opening Device (2 or 4 selvages).
- Up to 6 Cloth Scraping, Cleaning and Brushing Rolls for removing dust, dirt, leaf and other foreign matter.
- Production up to 200 linear yards per minute (in parallel operation).
- Multispeed motors drive up to 4 knives individually.
- Maximum suction efficiency provided at shearing point by dual-purpose suction and knife holder tubes.
- Exceptionally sensitive detector automatically stops and starts each knife motor individually — in sequence — permits shearing to within 8" of seam.
- Central control for all cleaning and shearing settings and adjustments.
- Automatically controlled shear cylinder lubrication.

Write for Complete Details





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Automatic SELVAGE TRIMMER & LOOP CLIPPER (Model SRS)

Features:

- Automatic Selvage Guider (unaffected by tension, width, or cloth winding).
- Unexcelled results at proven and practical mill speeds.
- Trims only (one or two) selvages—will not damage nubbed or other fabric textures.
- Built-in suction device provided at shearing point, assures complete shearing effect.
- Shears all weights of fabrics from lightest to heaviest upholstery fabrics, Fiberglas, etc.
- For any diameter rolls—in all commercial widths.

Complete Details On Request

Reiner also offers a Carpet Shear—as well as other *Menschner* machines for inspection, making-up, doubling, rolling, printing, marking, sizing and back coating, combing, calendering and palmering, sueding, etc.

Write for detailed literature:

ROBERT REINER INCORPORATED

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Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

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AN HONORED NAME IN TEXTILE MACHINES SINCE 1903

Tennant-maintained floor in carding department of a large southern mill

Only the TENNANT System can keep your floors this clean

Chances are that your floors *can* look like this the year around . . . *if* you use the TENNANT SYSTEM.

And your maintenance costs will usually run less per year!

Floor seals last longer. Newly-developed TENNANT Floor Seals, specially designed for textile mills, last longer than any comparable materials we know of. This ends need for frequent recoating and reduces annual maintenance costs.

Makes floors easier to clean. The exclusive TENNANT process *actually increases dirt-resistance of the average textile mill floor by 300%*. Soilage wipes off easily . . . in a fraction of the usual time.

Keeps floors bright. The TENNANT SYSTEM's exclusive cleaning techniques make it easy to keep your floor attractive month-after-month . . . even under heavy traffic.

You'll also enjoy added benefits in improved safety and employee efficiency when your mill is a bright, pleasant place to work in.

Your TENNANT Man is a qualified floor expert, ready to give free estimate of savings possible in *your* mill. For full information, write G. H. Tennant Co., 737P N. Lilac Drive, Minneapolis 22, Minn.

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

NEW LITERATURE Continued

Loading assemblies—Four new models are described in pamphlet from Jordan Industrial Sales Div., OPW Corp. (F-46)

Interplant communication — How to use punched tape for instantaneous communication is told in folder published by Remington Rand Div., Sperry Rand Corp. (F-47)

Fire prevention—Is the subject of a folder from National Safety Council. (F-48)

Accident prevention—Is covered by a new yearbook available from National Safety Council. (F-49)

Steel shelving—Bulletin describes several sizes and styles available from Penco Div., Alan Wood Steel Co. (F-50)

INSPECTING LOOMS

CONTINUED FROM PAGE 63

closes certain weaknesses of individual loomfixers. For instance, one loomfixer had a good grade on everything except the shedding motion. Investigation by the second hand disclosed the fact that he had never been properly instructed in timing and setting the harnesses. This oversight was immediately corrected.

But there is one thing that is necessary for a successful inspection and grading system for looms and loomfixers. The men that do the inspecting must be excellent loomfixers themselves, and they must have a reputation for fairness and impartiality.

In the three years since it started its present system, this mill has learned much about loom maintenance and human motivation. It has found that loom inspections can be used not only to improve mechanical condition but also to boost employee morale and encourage cooperativeness.

YARN IRREGULARITY

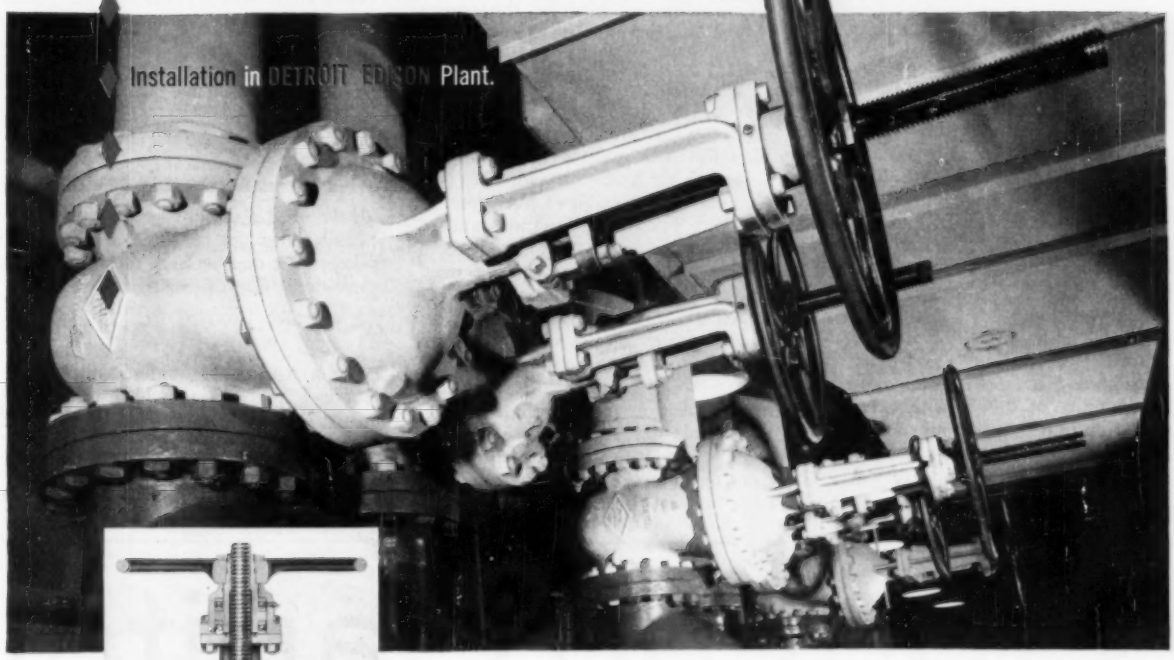
CONTINUED FROM PAGE 65

Mark-3 roving was not as great as for Mark 2, the difference was great enough to be reliable for our needs.

For statistical work in degree of accuracy, we use the following sym-

where they really know Costs

—you'll likely see the famous Jenkins mark on CAST STEEL Valves



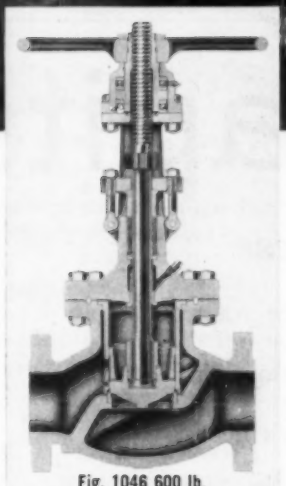


Fig. 1046 600 lb. O.S. & Y. Globe

In the power generation and industrial processing plants where Cast Steel valves are numbered by the score . . . where replacement and maintenance costs are recorded to the last penny . . . the true economy of Jenkins Valves is clearly seen.

Records will always show the extra value which Jenkins builds into Cast Steel valves, not only with design features you can see but also with unbending quality standards for alloys, castings, machining. Plus the toughest known testing and inspection system to assure perfection in every detail, and safety factors far beyond ratings.

Select from the Big Line in this Catalog. It includes pressure castings of Carbon, Carbon-Moly, 1¼% Chromium-Moly, 4% — 6% Chromium-Moly, 3½% Nickel . . . alloys that meet a wide variety of specifications. Also, a wide choice of patterns, sizes and seating material combinations to satisfy your different service conditions.

CALL YOUR JENKINS DISTRIBUTOR for a copy of Jenkins Cast Steel Valve Catalog and prices. Or write to Jenkins Bros., 100 Park Ave., New York 17.

Typical Jenkins features deliver lasting economy

A ball bearing yoke sleeve is standard on larger sizes • Cooling chamber and plugged connection for test purposes is regularly provided below packing box, but a lantern gland stuffing box is optional • Rustproof, lubricated and graphited, wire reinforced packing is standard • Soft steel ring joint body-bonnet gasket, fitted into accurately matched grooves to assure a vapor-tight joint • Seating is regrind-renew type.

JENKINS

LOOK FOR THE JENKINS DIAMOND

VALVES JENKINS SINCE 1864 Jenkins Bros

Jenkins cast steel Valves

Sold Through Leading Distributors Everywhere

bols:

X = any statistic, or numerical values.

$\overline{X}$ = average of any set of numerical values.

Σ = summation of a series of numerical values.

σ = standard deviation; measure of variation, or scatter value, within a body of numerical values; root-mean-square deviation.

σ' = standard deviation corrected for sample size; estimate of true value of standard deviation.

N = number of individual values in a series.

SE = standard error of the mean; probable error.

@ 0.95 = an average of 95 times out of 100. One SE is associated with a probability of 0.68, with a false indication the other 32 times (0.32).

Two SEs are associated with a probability of 0.95; 95 times out of 100 the results will be within tolerance, with a false indication the other 5 times.

Three SEs are associated with a probability of 0.997, with a false indication only 3 times out of 1,000.

Therefore $\overline{X} = 2{,}125 \pm 41$ @ 0.95 in Table 2 means that 95 times in 100, the true value of the breaking factor of Mark-1 roving will be between 2,084 and 2,166. This formula is true if the 12 tests are representative of the entire lot of yarn and if no unusual variable is introduced.

Standard Error Is the Key

The standard error of the mean is very important in all calculations of degrees of accuracy. It is equal to the standard deviation, corrected for sample size, and divided by the square root of the sample size. The formula is:

$$SE = \sigma' 1\sqrt{N}$$

A larger body of individual values results in a smaller standard error. Therefore a larger body of values has a smaller error and is closer to the theoretical true mean or average.

Table 3 shows how the standard error changes with various standard deviation and different sample sizes. The standard error increases as the standard deviation goes up but decreases as the sample size gets larger. Therefore increasing the sample size decreases the probable error with an inverse relation to the square root of the sample size.

Let's suppose you can accept a sampling error of 3% and that the 3% error cannot be exceeded 95 times out of 100. Then for Mark-1 roving with 12 tests as a pilot run, we use the following formula:

$X = 2{,}125$
$\sigma' = 71$
$CV = \sigma' / \overline{X} = 71/2{,}125 = 3.34\%$

$$N = \frac{t^2 V^2}{E^2}$$

$$N = \frac{(1.96)^2(0.0334)^2}{(0.03)^2} = 4.75 \quad \text{or} \quad 5$$

$V = CV$
E = allowable random-sampling error
N = the required number of tests
t = probability factor
(1.645 for 0.90)
(1.960 for 0.95)
(2.576 for 0.99)

In this instance, we stop at 12 tests.

Arrive at an Acceptable Deviation

If we need a sampling error of only 1% 99 times out of 100, the test is an expensive one because 74 tests will be needed. The calculation is:

$$N = \frac{(2{,}576)^2(0.0334)^2}{(0.01)^2} = 74$$

But a reasonable random-sampling error is 1% at 0.95, and the calculation is:

$$N = \frac{(1.96)^2(0.0334)^2}{(0.01)^2} = 42.8 \quad \text{or} \quad 43$$

You may be able to accept as sig-

Working Capital

to promote your business

Available through our factoring service . . . *When* you need it, in the amounts required. No red tape . . . Dommerich factoring provides you with cash today to meet tomorrow's needs.

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1958 SpinSaVac®

Unit Collection Cabinet (Type HI)

Compact, starter on side, full access to motor alley

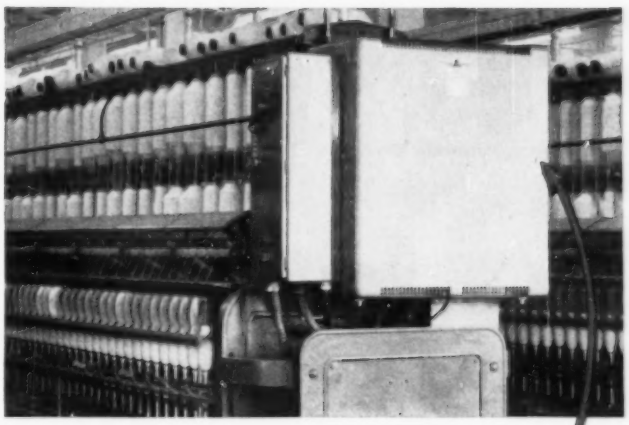
Flush surfaces

Large conical screen—fine mesh saran

Ample volume for collected lint

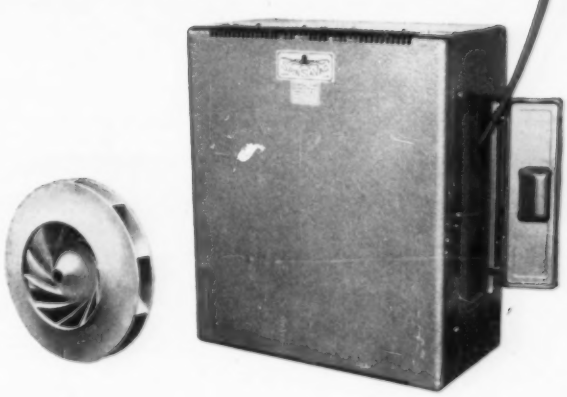
Large door for easy lint removal—air tight gasket locked without gluing

Air exhausted—up, down, or both—at low velocity, well diffused



Central Collection (alternate, not shown)

With provision for exhausting or returning room air



Clearing Conduit

Thick-walled, smooth, ethyl-cellulose

Strong, rigid, non-warping

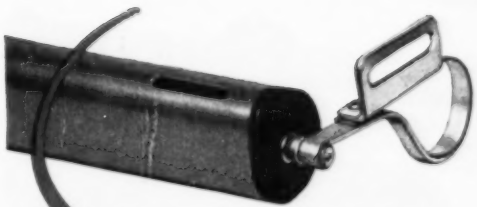
Spring mounted

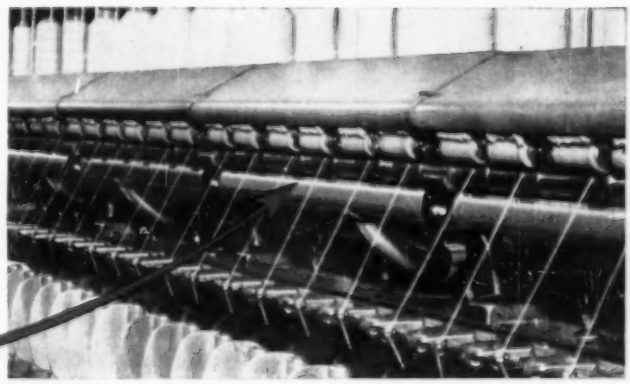
Pear-shaped for accurate positioning and easy piecing up

Conduits on frame interchangeable without adjustment

Vacuum Impeller

Double-shrouded air foil type, for greater efficiency and higher vacuum





Write or 'phone for further information about SpinSaVac and SpinSaCreel

Parks-Cramer Company

FITCHBURG, MASS. CHARLOTTE, N. C. ATLANTA, GA.

402

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nificant a 50-point increase in the breaking factor at 0.95 probability. Then the equation is:

$$N = 2\left(\frac{t}{d}\right)^2 = 16$$

N = required number of tests
σ' = standard deviation
t = factor for 0.95(1.960)
d = difference accepted as significant

At the end of 12 tests on Mark-3 roving, a summary shows:

$\overline{X} = 2{,}285$, and $\sigma' = 123$

$$N = 2\left(\frac{1.96 \times 123}{50}\right)^2 = 47$$

Precision Demands Numerous Tests

Now with the present difference of 160 points @ 0.997, the equation is:

$$N = 2\left(\frac{2.576 \times 135}{160}\right) = 9.2 \text{ or } 10$$

The present difference at 0.997 is usually acceptable.

Table 4 shows this formula applied to several differences at various levels of precision. Decreasing the difference increases the required number of tests significantly. In addition, increasing the precision increases the required number of tests at an accelerated rate.

POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 99

safety program, like the gentleman in Richmond who was overheard to say to a machine operator:

"I don't give a — — if your guard is broken! I need that work; so get going!"

Being a supervisor is important. Supervisors are vital to the production of a department. So they are of critical importance to the mill.

Certainly it's an important enough job so that a supervisor should be willing to talk the part as well as collect pay for the part. We don't mean "talking it up," like an infielder on a baseball team. We mean simply talking like what you are—a manager, a boss, an example.

What's Involved?

A number of habits will add greatly to any supervisor's capacity to eliminate the problem of the tongue and the hand that don't jibe.

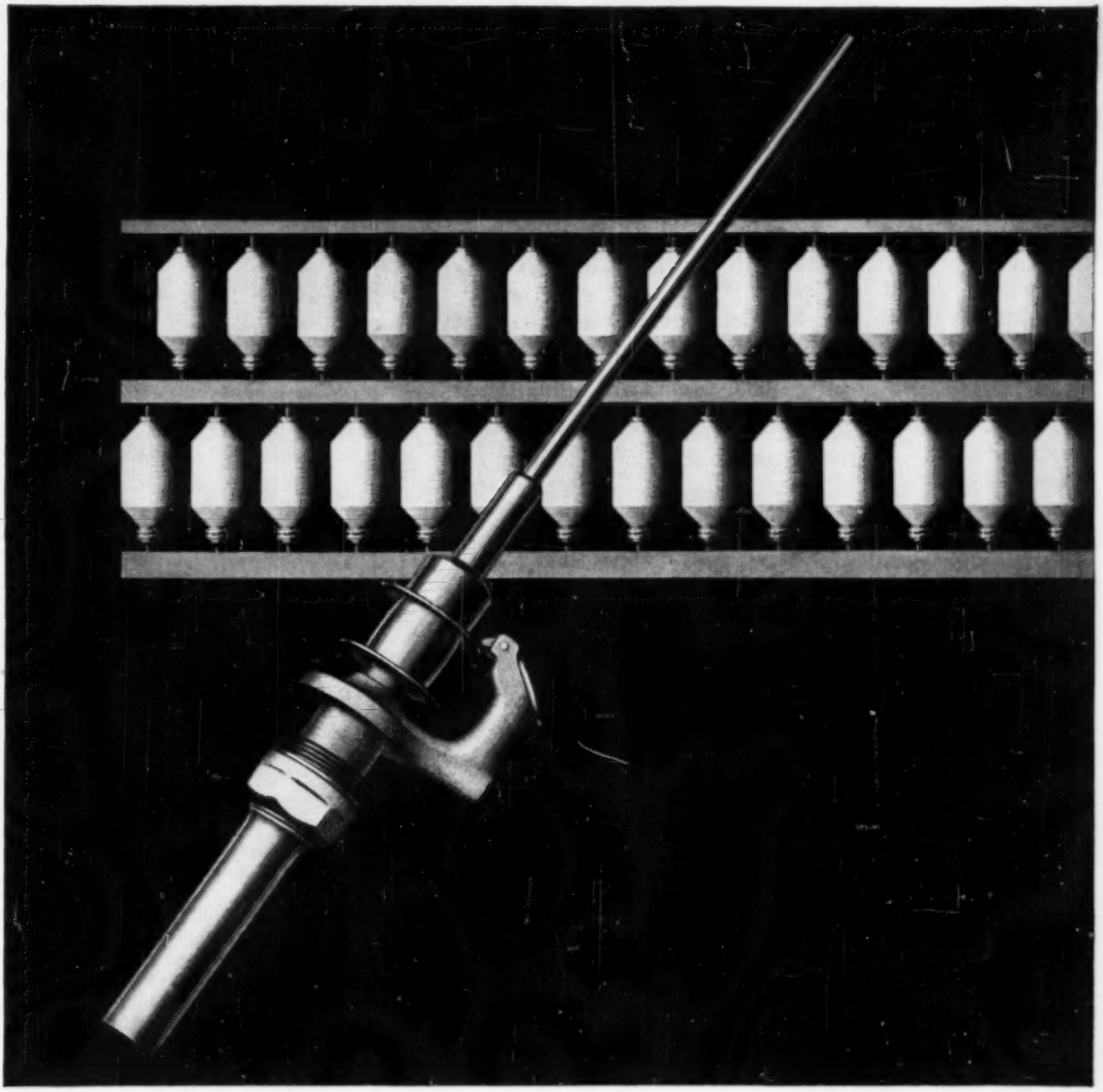
Identify your job. Figure out, for your own way of thinking (what the psychologists call your "frame of reference"), what a supervisor's job is. Is he just the chief worker; or is he a representative of management, bearing the management stamp, assigned a management responsibility?

Check your approach to the job. What's your attitude about the work—that it's something somebody else requires of you? Or something you require of others?

Explore your "fellow" feelings. When you're with people who have jobs like yours, do you feel that you're actually one of them? How about when you're with members of higher or top management? Do you discover, then, hostilities or inferiorities within yourself? Feelings of inadequacy and insecurity lie behind many a man's failure to say things as a supervisor should.

Examine your acceptance of policies. Do you agree with the wisdom and the necessity of most of the company's policies? If there are policies you're not so sure about, have you discussed them with your boss and with other supervisors, seeking an understanding of them and the reasons for them?

We used the word "habits." The implication is clear. It's not enough to do these things once, or even once a year on a kind of annual self-appraisal basis. Only by doing them



long-lasting lubrication lengthens bearing life

Premium-grade Spinesso has been specially formulated to solve lubrication problems for high-speed spinning and twister spindle bearings. It minimizes the formation of dark, sludge-like deposits. This means a *cleaner operation, better protection . . . less wear, less frequent lubrication.*

Free-flowing Spinesso gives positive protection particularly at critical start-up time – when fast, dependable lubrication is so necessary in preventing wear. Rusting and pitting, serious problems in the humid atmosphere of most textile mills, are effectively controlled by Spinesso.

Spinesso is also well-suited for other mill applications such as stitchers, counters and similar precision equipment. It can effect substantial savings by reducing handling and inventory and simplifying lubrication. Available in *three* viscosity grades. Complete technical data can be quickly obtained at your nearest Esso office in New England, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, the Carolinas, Tennessee, Arkansas, Louisiana, and the District of Columbia. Or write Esso Standard Oil Company, 15 West 51st St., New York 19, N.Y.

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ESSO RESEARCH works wonders with oil

NASH

. . . With The Famous No. 79

AUTOMATIC QUILL POLISHER

—protects product quality by preventing damage to fabrics and delicate filaments due to rough quills and broken picks. Cleans, buffs, and polishes loom bobbins at speeds up to 40 pieces per minute.

Send for illustrated brochure with complete information.

NASH

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SPECIAL FINISHING MACHINES SINCE 1890

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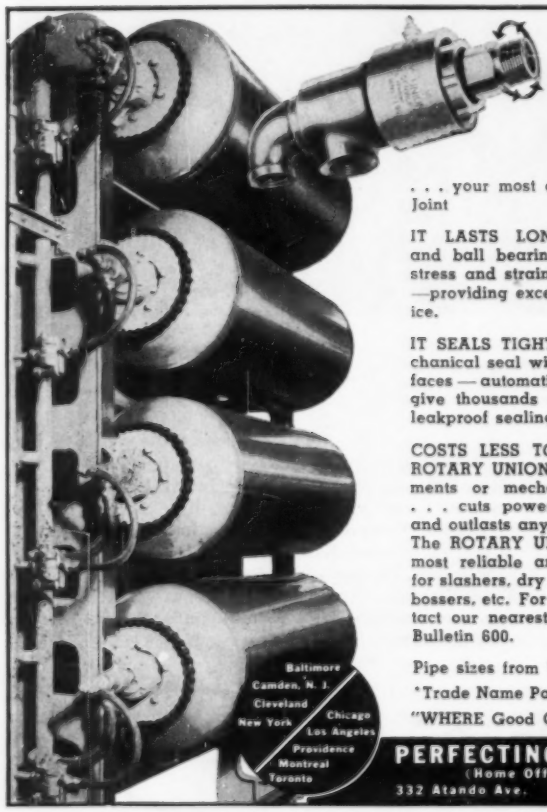

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. . . your most economical Rotating Joint

IT LASTS LONGER Self-aligning and ball bearing construction take stress and strain from moving parts —providing exceptionally long service.

IT SEALS TIGHTER Precision mechanical seal with optically flat surfaces — automatically maintained — give thousands of hours of perfect leakproof sealing.

COSTS LESS TO OPERATE The ROTARY UNION requires no adjustments or mechanical maintenance . . . cuts power consumption . . . and outlasts any other rotating joint. The ROTARY UNION is by far the most reliable and economical joint for slashers, dry cans, calenders, embossers, etc. For full information contact our nearest office or write for Bulletin 600.

Pipe sizes from ¼" through 3"

*Trade Name Patented

"WHERE Good Connections COUNT"

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(Home Office and Factory)
332 Atando Ave. Charlotte, N.C.

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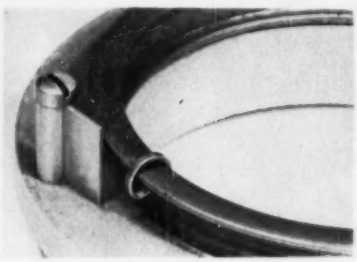
constantly, by reviewing your own job, attitudes, and feelings every day can you guarantee that you are not letting what you say be versus what you are.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 118



Traveler Cleaner

A self-cleaning traveler cleaner has been announced by Standard Textile Machine Works, 203 Magnolia St., Spartanburg, S. C. The blade, which acts partially as an air cleaner, can be adjusted to any weight or circle traveler and is adaptable to reverse twist.

Circle T-20 on Reader-Service Card

Vertical-Shaft Motor

A vertical solid-shaft high-thrust P-base motor in sizes from 1 to 40 hp. has been introduced by Reliance Electric & Engineering Co., 24,701 Euclid Ave., Cleveland 17, Ohio. Designed for direct mounting on high-thrust pumps, the motor is available in all standard enclosures: (1) protected; (2) totally enclosed, fan cooled; and (3) explosionproof.

The bonnet design of the all-weather splash cover permits stacking additional bearings to continuously absorb high up-and-down thrust loads.

The motor is available in all standard speeds to 3,600 rpm. and features cast-iron external construction for total protection against outdoor duty or long-term running in corrosive or hazardous atmospheres.

Circle T-21 on Reader-Service Card

Elastic-Fabric Tester

A tester for elastic fabrics, manufactured by Custom Scientific Instruments, Inc., 541-543 Devon St., Kearny, N. J., will flex four 1½-in.-, two 3½-in.-, or one 8-in.-wide sample at once in lengths up to 10 ins. The unit stroke is 0 to 8 ins., and the tester runs 58 cycles per minute. A counter counts each stroke.

Circle T-33 on Reader-Service Card

For more data, circle A-81 on Reader Service Card →

Warmest Wishes for a Merry Christmas

EASTERN GAS AND FUEL ASSOCIATES

BEACON COAL

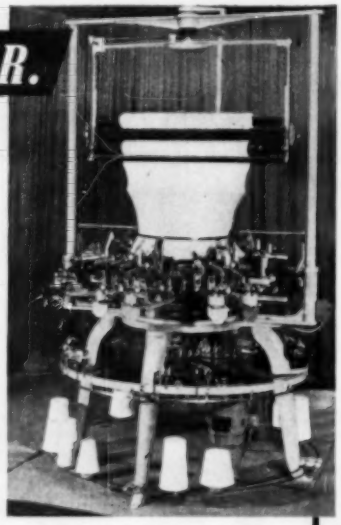
EASTERN GAS AND FUEL ASSOCIATES

PITTSBURGH BOSTON CLEVELAND DETROIT NEW YORK NORFOLK
PHILADELPHIA SYRACUSE

For New England: New England Coal & Coke Co. For Export: Eastmar, Garnac & Bullyn, Inc.

ALL NEW...
TOMPKINS S-1 JR.

MAKES THE MOST PERFECT CLOTH POSSIBLE



HERE'S A TYPICAL EXAMPLE...
Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- MINIMUM OF IMPERFECTIONS AND BROKEN NEEDLES

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

TOMPKINS BROS. CO.
623 ONEIDA ST. • SYRACUSE 4, N. Y.
Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846
For more data, circle A-82 on Reader Service Card

MORE PRODUCTION! HIGHER QUALITY LAPS!
COTTON or SYNTHETICS with the
LONG PNEUMATIC LAP CONTROL SYSTEM
FOR PICKERS
Exclusive Sales
Livingston & Haven
Incorporated
P. O. Box 808W, Charleston, S. C.
Direct Foreign Inquiries to:
PLATT BROS. (Sales), Ltd.,
Oldham England

Circle A-87 on Reader Service Card

GREATER PROTECTION to your AIR LINE!

M-B
AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1 and TRAP

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

M-B PRODUCTS
46 VICTOR AVE., Div.: 16
DETROIT 3, MICHIGAN

Circle A-88 on Reader Service Card

Balloon-Control Rings

Balloon-control rings that permit spinning frames to run 15% faster have been announced by Seabrook Transmission Co., P. O. Box 6, Anderson, S. C.

Manufactured by Textile Machinery Exchange, Inc., Charlotte, N. C., the rings take the place of separator blades and permit the use of lighter travelers. Other advantages are better-quality yarn, fewer ends down, and larger packages.

Circle T-22 on Reader-Service Card

Humidifiers

Models SF-10 and SW-5 have been added to the line of humidifiers made by Walton Laboratories, Inc., Irvington 11, N. J. These models have centrifugal atomizers and produce fine water vapor without heat.

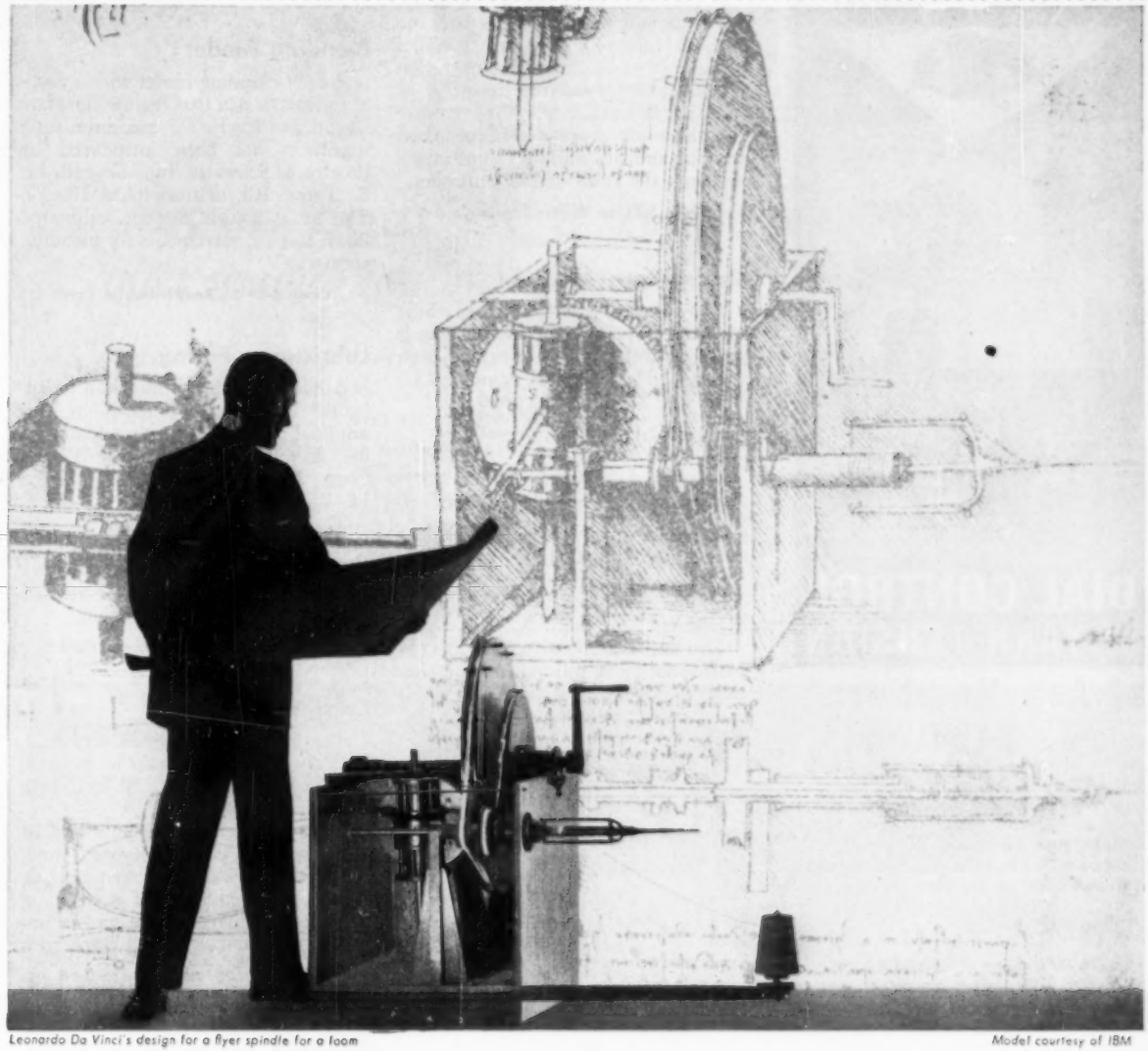
One model has an accordian filter with 620 surface areas. It evaporates 1 gal. of water per hour. To install the unit, only water and electrical equipment are required.

Circle T-23 on Reader-Service Card

Electronic Controllers

A choice of universal or simplified controller stations is being offered by The Foxboro Co., Foxboro, Mass., in its instrument line for electronic

creative designing calls for an open mind



Leonardo Da Vinci's design for a flyer spindle for a loom

Model courtesy of IBM

EVEN DA VINCI'S DESIGN COULD HAVE BEEN BETTER WITH HELP FROM AN SKF ENGINEER—An SKF engineer never has to push one bearing over another, because SKF makes all four types of ball and roller bearings in over 3,000 sizes. This gives every SKF engineer the kind of flexibility he needs to keep an open mind on *any* bearing problem. Give your problem to SKF and see.

7812

Spherical, Cylindrical, Ball, and "Tyson" Tapered Roller Bearings

EVERY TYPE—EVERY USE

SKF®

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

*REG. U.S. PAT. OFF.

Accurate
Yarn is under perfect tension from a central location. One dial adjustment changes tension uniformly at all tension stations.
The Lindly Electrotense: Simple, compact, inexpensive. Accurately controls yarn tension from zero to about 20 grams.

DIAL CONTROL of YARN TENSION at Any Number of Stations!

The Lindly ELECTROTENSE is the new, inexpensive, electro-mechanical way to control yarn tension from almost zero to about 20 grams. A turn of a single, centrally located dial applies desired tension evenly and simultaneously at all tension stations.

What are the advantages?

The Lindly ELECTROTENSE permits easy, instant change of yarn tension. It results in more uniform beams, more yarn per warp beam, less maintenance and machine down-time, fewer broken ends and better cloth.

GET THE FULL FACTS ON THIS NEW TIME-SAVING, QUALITY-IMPROVING, COST-CUTTING LINDLY SYSTEM. WRITE, WIRE OR PHONE TODAY!

It Pays to Know LINDLY the Lindly Count

LINDLY & COMPANY, INC.
248 HERRICKS ROAD
MINEOLA, NEW YORK

Circle A-85 on Reader Service Card

control of process variables: (1) Model 62 universal controller has extra-wide mode adjustment ranges to handle any control applications, and (2) Model 61 is a simplified flow controller with adjustable proportional-plus-reset action especially suited to flow control.

Instrument characteristics are: no vacuum tubes; plug-in subassemblies for simplified maintenance; operation independent of related recorder or indicator; all supervisory and control functions are from a 3x6-in. panel station; and all working adjustments are from the front of the controller.

Circle T-24 on Reader-Service Card

Stretch-Yarn Machine

A high-speed stretch yarn machine capable of operating at spindle speeds of 140,000 to 150,000 rpm. has been announced by Universal Winding Co., P. O. Box 1605, Providence 1, R. I.

Circle T-25 on Reader-Service Card

Automatic Tension Control

Tensions involved in cloth-winding or unwinding operations are closely controlled by an automatic tension controller developed by Mount Hope Machinery Co., Taunton, Mass.

The unit is responsive to as little as 1-oz. variation in roll tension and controls the braking system through a load-sensing roll that actuates air-operated controls.

Circle T-26 on Reader-Service Card

Marker Ink

A new-formula marker ink has been developed by Diagraph-Bradley Industries, Inc., 50 Church St., New York, N. Y. The ink is designed especially for felt-tip marking pens but will work equally well in fountain brushes. It leaves a permanent mark on textiles and other surfaces.

Circle T-27 on Reader-Service Card

Helical-Gear Drives

Two lines of helical-gear drives are being offered by Link-Belt Co., Prudential Plaza, Chicago 1, Ill.: (1) a quadruple-reduction helical-gear drive and (2) larger sizes of double- and triple-reduction drives.

The compact quadruple-reduction speed drive is available in five sizes with ratios as high as 2,217 to 1. The helical-gear trains operate in high-capacity ball bearings and roller bearings in cast-iron housings.

Space requirements and layout problems are minimized by locating input and output shafts in the same horizontal and vertical planes. Automatic splash lubrication of all moving parts assures dependable lubrication and operation at all speeds.

Circle T-28 on Reader-Service Card

Blending Feeder

A fiber blending feeder with a drop-bottom scale pan that features low tare weight and inertia for maximum scale sensitivity has been introduced by Proctor & Schwartz, Inc., Seventh St. & Tabor Rd., Philadelphia 20, Pa. The scale pan is directly calibrated down to ½-oz. increments for blending accuracy.

Circle T-29 on Reader-Service Card

Lubrication Fitting

A lubrication fitting that can be adjusted from 0 to 0.0032 in. for minimal delivery has been announced by Alemite Div., Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill.

The valve operates under a pump pressure of 800 to 1,000 psi. and is especially suitable for textile machines where minute quantities of oil are used to avoid product contamination.

Circle T-30 on Reader-Service Card

Card Feeders

Two improved Bramwell card feeders have been announced by Geo. S. Harwood & Son, Inc., 50 LaGrange St., Worcester 8, Mass.

Features include: oil-impregnated bearings, larger-capacity hopper, variable-speed apron drive, a reciprocating curved board in place of a stripping beater for extra-long staple, and an improved scale and automatic catch pan.

Circle T-31 on Reader-Service Card

Warp Spray

A silicone warp spray designed to stop fraying and broken filaments in weaving is being manufactured by John H. Breck, Inc., Springfield, Mass., and is being distributed by Schmidt Mfg. Co., New Bedford, Mass., and 206 Emile Ave., Greenville, S. C.

The spray binds yarn filaments and lubricates them, dries quickly, will not stain, and washes out quickly with warm water.

It is also being used at tying-in machines to strengthen fine yarns and to lubricate the knots. In recent tests, the spray has been effective on Orlon and cotton blends, Dacron, and rayon filament yarns.

Circle T-32 on Reader-Service Card

Inquiring executive---

---saves cost of 3 Roving Frames

after seeing Platt M.S. 2 increase efficiency 30%

by J.L.C.

"Since observing the Platt operation," writes the Plant Engineer of one of America's largest mills, "I have re-evaluated our roving requirements and proposed production and this made a difference in roving frames required. For .90 HR, 750 spindle RPM, 75% efficiency, 1.12 T.M., 2-96 spindle frames equipped with a long draft system will be required. For .50 HR, 725 spindle RPM, 75% efficiency, 1.12 T.M., 8-96 spindle frames with conventional 3-roll draft system will be required. *Thus, we will need 10 frames instead of 13 and 960 spindles instead of 1144.* Not only should this increase the return on investment but it will also provide more efficient job assignments." These are the findings of one mill man. We invite inquiries from other executives who want *all* the facts necessary to make an informed decision.

ATKINSON, HASERICK & CO., INC.
Engineers & Agents for the World's Leading Textile Machinery
FRAMINGHAM, MASS.
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OLDHAM, ENGLAND MARKETING THE TEXTILE MACHINERY MADE IN THE WORKS OF PLATT BROTHERS & CO. LTD. DOBSON & BARLOW LTD. HOWARD & BULLOUGH LTD.

Platt Roving frames manufactured by the world's largest manufacturer of textile machinery

This message will appear only once

LAST CALL

To reserve your booth space in the

"World's Largest Knitting Trade Show"

KNITTING ARTS EXHIBITION

MAY 4-8, 1959

Sponsored by the 3 Great Divisions of the Knitting Industry:

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Nat'l Knitted Outerwear Ass'n
The Underwear Institute

ONLY A FEW BOOTHS LEFT!

Over 500 booths have already been reserved by leading suppliers of machinery, mill equipment, yarns, supplies and services for the 1959 Knitting Arts Exhibition.

This will be your last chance to reserve your own booth—to show off your product to the 10,000 knitting executives who will be coming to the Show from all parts of the world.

For details, address either

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332 Park Square Bldg., Boston 16, Mass.
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ROBERT T. KENWORTHY—Exposition Management
10 East 40th St., New York 16, N. Y.
LExington 2-4613

Circle A-83 on Reader Service Card

Operating Ventilating Fans Requires Special Skill

Ventilation is the circulation of air and includes these factors: supplying fresh air and removing heat, dust, toxic gases, fumes, and odors. Almost without exception, any modern ventilating system requires a fan to circulate the air.

Fans are of three general types: (1) propeller, (2) axial, and (3) centrifugal. Each fan is manufactured in a large range of sizes.

They are made in many discharge positions and with either clockwise or counterclockwise rotation of the impeller. With few exceptions, they can be furnished for either direct connection or V-belt drive.

Good Foundation Reduces Cost

A good rigid foundation as level as possible is necessary for every fan installation. It insures (1) permanent alignment of the fan and driving equipment and (2) freedom from excessive vibration. Therefore maintenance cost is minimized.

The best foundation is poured concrete under the fan and all drive components. A generally accepted rule of thumb is: "The weight of a concrete foundation is at least three times the weight of the equipment it supports."

Anchor bolts set in concrete should be surrounded by pipe sleeves to allow adjustment if they are displaced when the concrete is poured. Make an allowance of ½ to 1 in. for grouting and shims to level the fan.

Steel Foundations Must Be Strong

When a structural-steel foundation is necessary, make it rigid enough for permanent alignment. It must carry with minimum deflection not only the weight of the equipment but the loads from centrifugal forces set up by the rotating elements. Weld or rivet the entire structure well to eliminate loosening and distortion.

Install fans above the ground floor of a building over a rigid wall or column if possible. When an overhead platform must be used to support a fan, make it strong and rigid as in structural-steel foundations.

Vibration-isolating bases can be used when you want to reduce the transmission of sound and vibration from a fan and motor to other areas of a building. The base can be a resilient material, steel springs, or both. Use enough isolators and space them so that the fan is supported adequately. Always use flexible connections from the fan to the duct work.

Fans are furnished with either antifriction or sleeve bearings. Many bearings, both antifriction and sleeve, are self-aligning. But they are designed to compensate for shaft deflection only; they will not take care of bearing misalignment. When they are installed carelessly, leakage of lubricant, overheating, or complete failure may result.

Couplings Require Little Care

Couplings require little attention if they are installed properly and kept in alignment. They are called flexible couplings but are not intended to function as universal joints. It's extremely important to install both halves concentric and parallel.

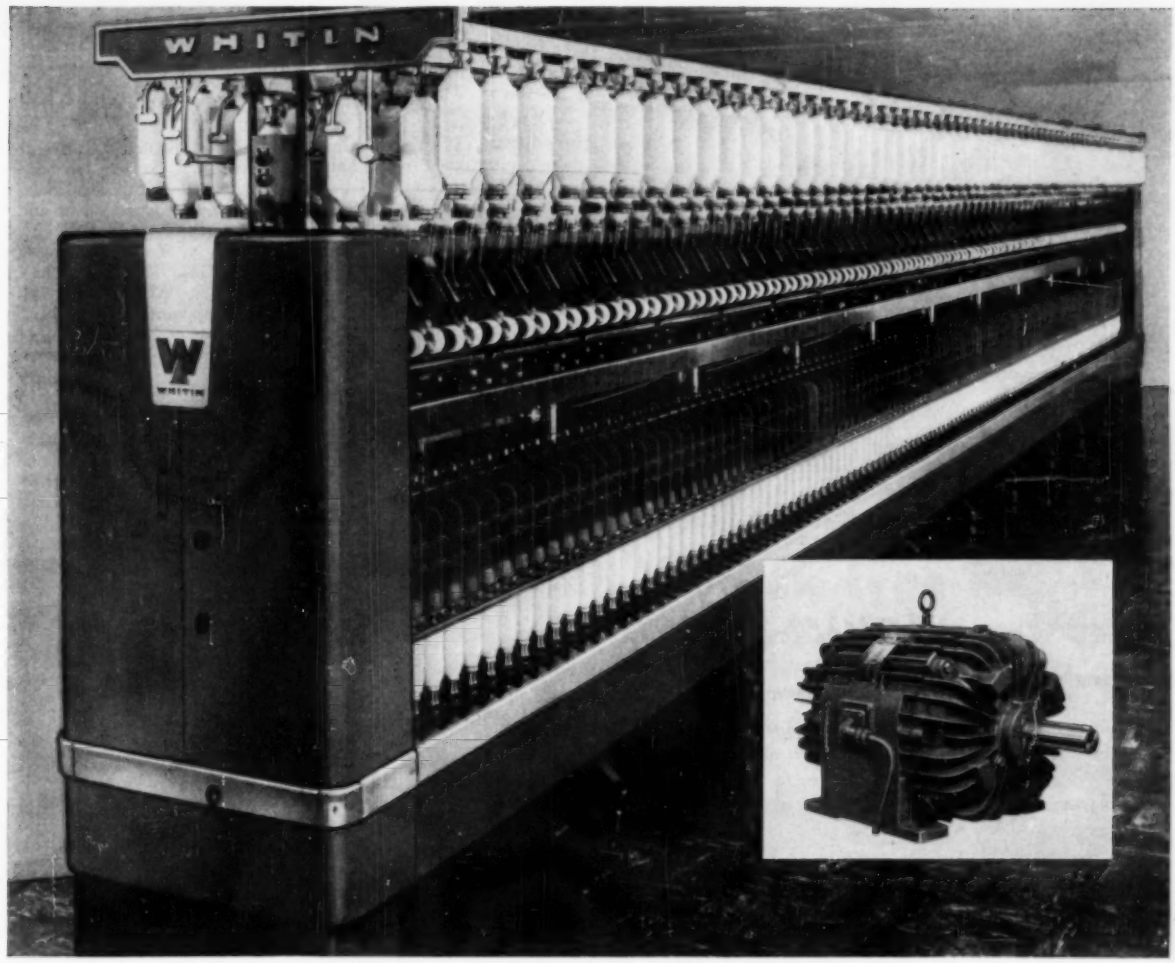
Poor installation will damage the coupling and may damage the fan, motor shaft, and bearings. Check for parallel with a feeler gauge at four points between the coupling halves: top, bottom, and two sides. Use a straightedge to check concentricity at corresponding points on the outer periphery of the two halves.

Sheaves Must Be in Alignment

Install sheaves and maintain them in perfect alignment. Fan and motor shafts must be parallel, and the centers of the grooves on both sheaves must be in perfect alignment.

When belts are installed, always move the motor so that the belts can be placed in their grooves easily. Never pry or force them on.

Belt drives depend on friction and must be under some tension to function properly. If too loose, they slip and overheat; if too tight, they place an extra strain on shafts and bearings and may stretch excessively. Correctly adjusted belts have just enough tension to keep them from slipping at full speed and load. *Frederick C. Jones, Buffalo Forge Co., in Maintenance Engineering Handbook, McGraw-Hill Book Co.*



AT WHITIN MACHINE WORKS

DIEHL* motors power new spinning frame

Described as "the world's most advanced spinning frame," the new "Piedmont" recently announced by Whitin Machine Works, Whitinsville, Massachusetts represents an investment of over a million dollars in research and tooling, and incorporates a score of innovations designed to achieve maximum operational efficiency and productivity in combination with attractiveness in appearance.

DIEHL engineers were called upon to work closely with WHITIN in the development of a motor drive that would exactly meet the requirements of this machine. The result . . . a motor of totally-enclosed design which provides extremely smooth start and smooth acceleration over its entire operating range, thus preventing yarn breakage. Despite its relatively small frame size, the motor has ample capacity to take care of various types of yarns and is equipped with thermal protection against possible excessive overloads. It has been accepted as standard equipment for the "Piedmont" Spinning Frame.

This is another example of DIEHL ability to work closely with machinery manufacturers in the development and manufacture of motors with the precise characteristics needed for efficient machine operation . . . an important reason for using DIEHL motors to power your equipment.

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Diehl*

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Electrical Division of THE SINGER MANUFACTURING COMPANY

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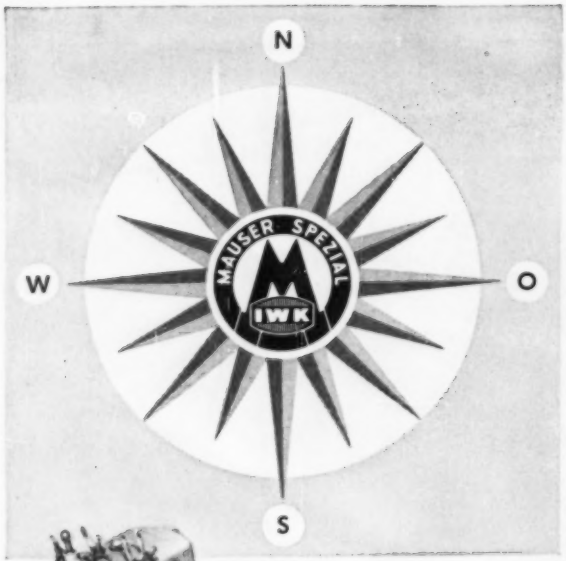
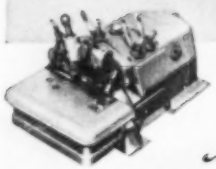
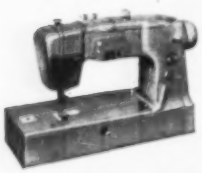




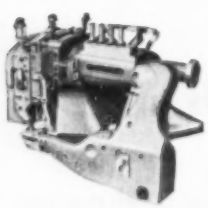
Mauser-Special

Industrial Sewing Machines



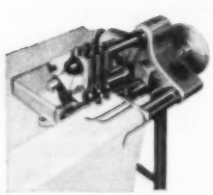
owe their international reputation to the precision of all their component parts, as well as to their most accurate assemblage and extremely precise adjustment.

A complete line of various types are manufactured. They are used for all appropriate purposes by manufacturers of hosiery and knit goods as well as clothing, woven goods, blankets and similar materials.



Our manufacturing program includes:

Overlock Machines
Single Chainstitch Machines
Double Chainstitch Machines
Machines for Sewing Elastics
Border-Attaching Machines
Band-Attaching Machines
Bag Sewing Machines
Cylinder Machines
Feed-off-the-arm Seam-Felling Machines
Flat-Seam Machines
Ribbon Cutting Machines



Leaflets are available on application

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NEWS ABOUT SUPPLIERS

ACME STEEL CO., Chicago, Ill.—Has promoted P. L. Dafoe to vice president of the Fabricated Div. J. R. Sansom has been named sales manager of that division. In the Strip Steel Sales Div., N. C. McNutt has been promoted to vice president and A. E. Russert has been named sales manager. . . . **AIR REDUCTION CHEMICAL CO.**, New York, N. Y.—Is building a polyvinyl-alcohol-resin plant at Calvert City, Ky., and a supporting pilot plant at Bound Brook, N. J. . . . **ALLIED CHEMICAL CORP.**, New York, N. Y.—Has appointed R. E. Mulcahy Northern regional sales representative. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.—Has named E. G. Walker sales manager of the Fibers Div. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has promoted R. E. Reynolds to field sales manager for Avisco cellophane, Film Div. C. R. Shaffer has been named New York-district sales representative, and B. F. Millican has been promoted to Atlanta-district sales manager of that division. The company has terminated rayon-yarn manufacturing at its Roanoke, Va., plant but will continue to produce Filatex elastic yarns there.

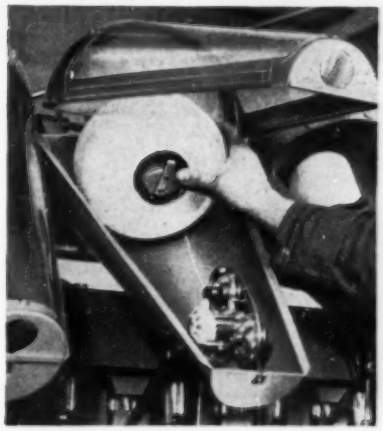
H. MERRILL BOWMAN (left) has been named by T. B. Wood's Sons Co., Chambersburg, Pa., as vice president and director of sales. **JAMES H. BLACK** (center) has been elected president of Fibers Industries, Inc., New York, N. Y. **THOMAS D. RAMSEY** (right) has been appointed district sales manager in the Gastonia, N. C., area for the Naugatuck Chemical Div., U. S. Rubber Co., New York, N. Y.

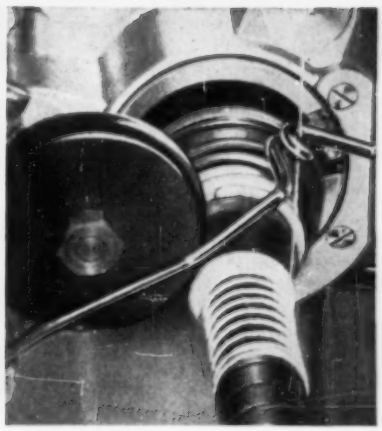
ANHEUSER-BUSCH, INC., CORN PRODUCTS DIV., St. Louis, Mo.—Has named J. Abell sales representative in South Carolina. . . . **BORDEN CHEMICAL CO.**, New York, N. Y.—Has announced that facilities for producing polyvinyl-acetate beads are now in operation at its Illiopolis, Ill., plant. L. G. Hoth has been appointed manager of advertising and merchandising. . . . **CELANESE CORP. OF AMERICA**, New York, N. Y.—Has named R. H. Powers sales manager for filament yarns, Textile Div. H. F. Tindel has been appointed assistant director of new-product merchandising, and J. C. Cook has been named assistant merchandising manager in that division. Fiber Industries, Inc., jointly owned by Celanese and Imperial Chemical Industries Ltd., of Great Britain, will build its new plant for production of Teron polyester fiber near Shelby, N. C. **CHEMSTRAND CORP.**, New York, N. Y.—Has named C. W. Carvin, Jr., assistant to the vice president and general manager of marketing and R. C. Brown manager of program analysis. R. E. Smith has been named executive director, Acrilan, and P. W. Runge executive director, nylon. . . . **CIBA CORP., INC., PLASTICS DIV.**, New York, N. Y.—Has merged with its manufacturing affiliate, Ciba Products Corp. . . . **CLARK EQUIPMENT CO.**, Newark, N. J.—Has established a used-equipment center where used fork trucks of any type or make will be bought, sold, or traded. . . . **DEWEY & ALMY CHEMICAL DIV., W. R. GRACE & CO.**, Cambridge, Mass.—Has named G. D. Jackson sales representative for organic chemicals for South Carolina, Georgia, and Florida. . . . **DOW CHEMICAL CO.**, Midland, Mich.—Has elected Dr. W. H. Schuette a vice president. T. A. Shem has been named advertising manager of the Textile Fibers Dept. . . . **DUNSON & NEW, INC.**, Greensboro, N. C., and Greenville, S. C.—Has been incorporated for sales of textile machinery and supplies throughout the Southeast. It will be the exclusive

SCHWEITER

Suction hood takes all normal cross wound bobbins, also cheeses ▶

ROTOR device for tailless bobbins reduces labor when filling loom batteries ▶▶

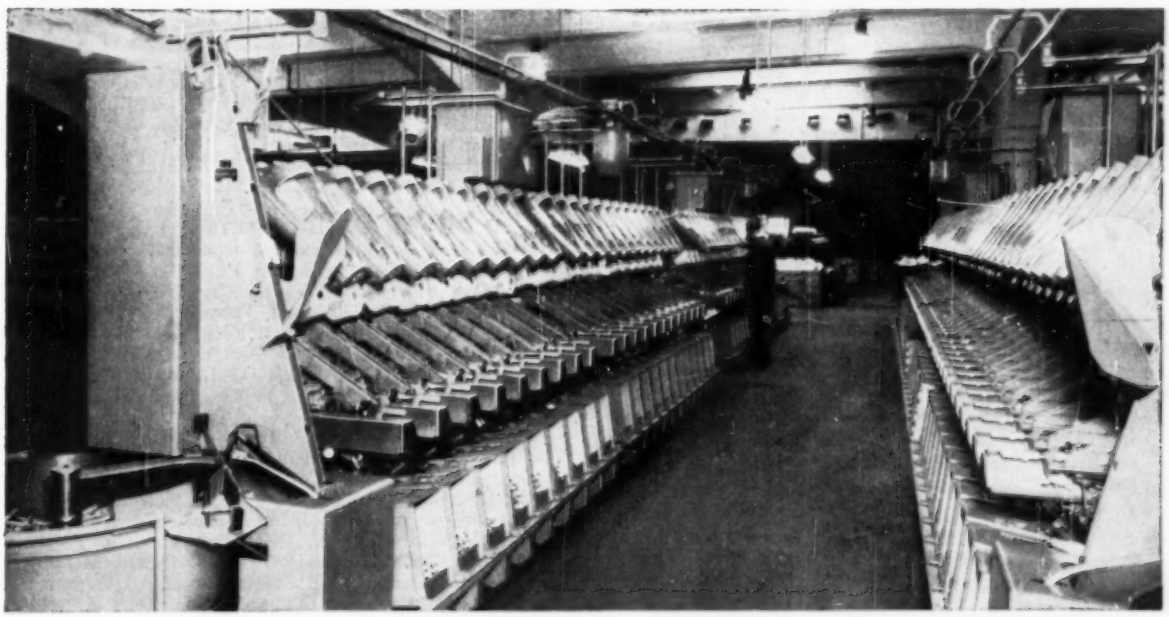




SUPER-AUTOMATIC BOBBIN WINDER type MSL

This is one of the most efficient, most versatile machines in the automatic bobbin winder field

- **Automatic feeding device for empty bobbins**
- **Individual apparatuses** • **Automatic suction dust remover**
- **ROTOR device for tailless bobbins** • **Spindle speed 10,000 r.p.m.**
- **Bobbin packing device PACKER, for transporting bobbins directly to the loom**



SCHWEITER LTD.

HORGEN (Zurich) Switzerland

Manufactured by **WHITIN MACHINE WORKS**, *Whitinsville, Mass. (U. S. A.) for sale in U. S. A. and Canada*
Manufactured by **SCHWEITER** *for sale in other countries*

For more data, circle A-91 on Reader Service Card

with

DIXON

Saddle Guide Changeovers

Dixon Super Saddle Guide does away with oiling, practically eliminates roll picking — keeps your process clean, through Dixon design in conjunction with Rulon® (oil-free bearing material developed by Dixon). And the same creative engineering renders misalignment impossible: Unique ball and socket swivel mounting ensures that front roll and front saddle self-align automatically with bottom steel front roll. Complete ruggedly-built installation is so simple that it *costs much less* than any competitive device.

2 STEP INSTALLATION CAN SPREAD INVESTMENT

Dixon Super Saddle Guide changeovers can be installed in two steps, to spread investment: Front roll and saddle combination first; later adding middle rolls, back rolls and saddles — no parts wasted, no costly elements to throw away when installation is completed. Dixon Saddle Guide assemblies for more than 1,000,000 spindles (Duo-Roth or Casablanca type spinning) have been supplied to textile leaders like:

Carlton Yarn Mills (28,000 spdls.)
Chicopee Mfg. Corp. (272,000 spdls.)
Clinton Cotton Mills (73,000 spdls.)

as well as to original equipment manufacturers.

Write for complete data on Dixon Super Saddle Guide

DIXON CORPORATION

BRISTOL RHODE ISLAND

Southern Sales: R. E. L. Holt, Jr., and Associates, Inc., Box 1319, Greensboro, N. C. and Lawyer's Office Building, P. O. Box 321, Greenville, S. C.

Manufacturers of Drafting Devices since 1876

sales agency for Dixon Corp., Bristol, R. I., in Virginia, the Carolinas, Georgia, Alabama, and Tennessee. . . . **FAULTLESS CASTER CORP.**, Evansville, Ind.—Has elected C. B. Noelting president.

ROBERT F. McCLELLAN (left) has been elected vice president of Nopco Chemical Co., Newark, N. J. JOHN T. ROSE (center) has been appointed branch sales manager of the Charlotte, N. C., sales office of Arnold, Hoffman & Co., Inc. JOSEPH N. PETERS (right) has been named manager of the Eastern sales-engineering division of Ludell Mfg. Co., Milwaukee, Wis.

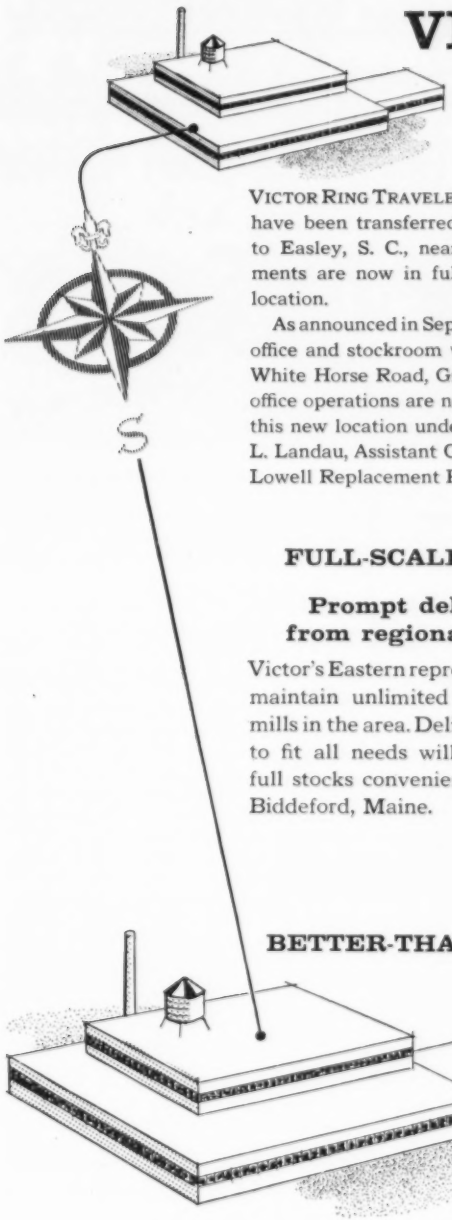
FOOD MACHINERY & CHEMICAL CORP., New York, N. Y.—Has named J. M. Richard sales manager in the New York district, Westvaco Chlor-Alkali Div. The International Div. has announced that a carbon-bisulfide plant is being built by Snia Viscosa in Varedo, Italy. It will use a new carbon-bisulfide process developed and licensed by FMC. . . . **GATES RUBBER CO.**, Denver, Colo.—Has named H. B. Duke manager of industrial relations; E. J. Busch, Jr., divisional advertising manager for industrial products and W. S. Williams manager of printing services. The company will build a rubber-products plant in Toluca, Mexico. Among its products will be V-belts. . . . **GAYLORD CONTAINER DIV., CROWN ZELLERBACH CORP.**, St. Louis, Mo.—Has promoted L. J. Ross to manager of its box plant, Atlanta, Ga.

GOODYEAR TIRE & RUBBER CO., Akron, Ohio—Has formed a Vitel-Products Development Dept. to handle problems of application and sales service for Vitel resins and Videne laminating film. . . . **RALPH GOSSETT & CO.**, Greenville, S. C.—Has been appointed Southern representative for American Paper Products Co., Philadelphia, Pa.; Nylco Products, Inc., Clinton, Mass.; Brawer Bros. Silk Co., Inc., New York, N. Y.; and Papa-Chem, Inc., Philadelphia, Pa. . . . **GOWER MFG. CO.**, Greenville, S. C.—Has named E. F. Kulp to the Engineered Products Div. to head sales effort in the North Carolina-Virginia area. . . . **HAYES FREIGHT LINES, INC.**, Springfield, Ill.—Has temporary authority to manage and operate Elliott Motor Lines, Winchester, Va.

HOOKER CHEMICAL CORP., PHOSPHORUS DIV., New York, N. Y.—Has moved its executive sales office to the Lincoln Building, 60 E. 42nd St. . . . **INDUSTRIAL RAYON CORP.**, Cleveland, Ohio—Has appointed B. F. Benson market-development manager of the industrial-products division. . . . **WILLIAM ISELIN & CO., INC.**, New York, N. Y.—Has named D. C. Foulk vice president. . . . **JOHNSON MOTOR LINES, INC.**, Charlotte, N. C.—Has named L. A. O'Hara sales representative in the Allentown, Reading, and Scranton, Pa., area and B. J. James district sales manager of the Philadelphia, Pa., area.

LAMSON MOBILIFT CORP., Portland, Ore.—Has named F. M. Mayse manager of sales. . . . **LINDLY & CO.**, Mineola, N. Y.—Has appointed Electro-Motion Corp., Charlotte, N. C., representative for North and South Carolina and portions of Tennessee and Virginia. . . . **METRO-ATLANTIC, INC.**, Centredale, R. I.—Has appointed J. J. Sarracino plant superintendent. Mrs. Rhita Wrightson has been named assistant technical director for the Southern Div. . . . **MILPRINT, INC.**, Milwaukee, Wis.—Has elected R. N. Ewens chairman of the board and Arthur Snapper president. . . . **MONSANTO CHEM-**

FORECAST



VICTOR RING TRAVELER MOVES SOUTH

VICTOR RING TRAVELER manufacturing facilities have been transferred from Providence, R. I., to Easley, S. C., near Greenville. All departments are now in full production at the new location.

As announced in September, Victor's Southern office and stockroom was previously moved to White Horse Road, Greenville, S. C. All Victor office operations are now being conducted from this new location under the direction of Alfred L. Landau, Assistant General Manager of Saco-Lowell Replacement Parts Division.

Victor Traveler production is now logically centered in the area of greatest demand, permitting still better service to Southern mills. Victor service to New England will continue in full extent and efficiency.

All Victor customers will benefit from product and service improvements made possible by the expanded manufacturing space, new production equipment, and better facilities for quality control and research.

For complete information, call your nearest Victor Service Engineer.

FULL-SCALE VICTOR SERVICE TO NEW ENGLAND MILLS

Prompt deliveries from regional stocks

Victor's Eastern representatives will maintain unlimited service to all mills in the area. Delivery schedules to fit all needs will be met from full stocks conveniently located at Biddeford, Maine.

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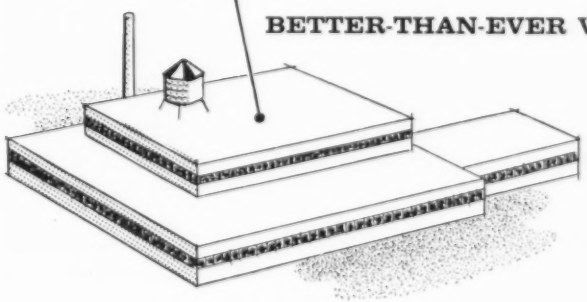

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Sales Agent

WALTER L. HUDSON
Assistant Sales Manager

C. W. WILBANKS
Laurens, S. C.
Tel. 3366

F. P. BODENHEIMER
Granite Falls, N. C.
Tel. 4303

C. H. GREEN
Lanett, Ala.
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25 grain sample is processed in four minutes and is comparable to your standards of acceptable cotton for each quality of your yarns and fabrics. Literature and price on request.

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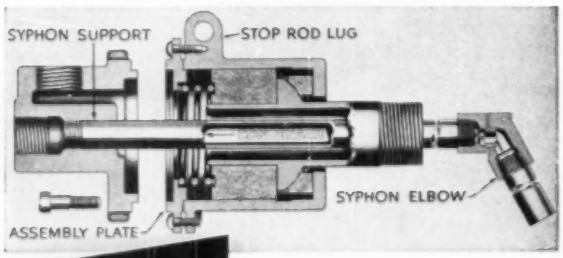
We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.



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Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5' and 7' cotton slashers, dry cans, etc.

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For more data, circle A-95 on Reader Service Card

NEWS ABOUT SUPPLIERS Continued

ICAL CO., St. Louis, Mo.—Has named R. N. Auguston area-development manager for Latin America for the Overseas Div. M. P. Mauzy has been named a group leader in the research department of the Inorganic-Chemicals Div., and J. P. Morrissey has joined the sales department of that division with headquarters in St. Louis.

MODELS of Diamond Alkali Co.'s new research center, to be built on an 800-acre site in Concord Township, Ohio, a few miles south of the company's Painesville Plant and its present research center in Fairport, are shown here. The company will probably start construction next May.

NATIONAL ADHESIVES LTD., Toronto, Ont.—Has started building a vinyl emulsion polymerization plant in Toronto. . . . **OCTAGON PROCESS, INC.**, Staten Island, N. Y.—Has formed a new customer-service division. . . . **PROSPERITY CO.**, Syracuse, N. Y.—Has appointed H. J. Martin director of marketing. . . . **JOSEPH T. RYERSON & SON, INC.**, Chicago, Ill.—Has named J. A. Houston assistant general manager of the Philadelphia, Pa., steel service plant. H. W. Beck has been appointed general manager of the Pittsburgh, Pa., plant. . . . **SACO-LOWELL SHOPS**, Boston, Mass.—Has appointed R. Walters executive assistant to the president. H. A. Jewell has been named director of procurement and material, and A. F. Koepcke has been named director of industrial and public relations and advertising. The company has changed the name of the Pawtucket Spinning Ring Co. to Saco-Lowell Shops—Spinning Ring Div. and moved the facilities of this division to Greenville, S. C.

SHAWINIGAN RESINS CORP., Springfield, Mass.—Has named R. C. Schuler to the Chicago, Ill., district sales office. . . . **SYNTHETIC TEXTILE FIBERS, INC.**, Charlotte, N. C.—Has named J. F. Smart vice president. The company represents Eisenberg Fibers, Inc., New York, N. Y., in the South. . . . **JAMES TALCOTT, INC.**, New York, N. Y.—Has named H. C. Culshaw executive vice president in charge of the Commercial-Finance Div. and a director of the company. . . . **TRANTER MFG., INC.**, Lansing, Mich.—Has appointed G. F. Delaney to the Platecoil Div. . . . **TRUST CO. OF GEORGIA**, Atlanta, Ga.—Has moved its New York office of the representatives of the Factoring Dept. to the Empire State Building.

U. B. S. CHEMICAL CORP., Cambridge, Mass.—Is building a new plant in Marlborough, Mass. . . . **UNION CARBIDE CHEMICALS CO.**, New York, N. Y.—Has transferred D. W. Enright from the Charlotte, N. C., to the Chicago, Ill., district. A. J. Lyon has been transferred from the general sales office to the Charlotte district; A. R. Mitchell from the New York, N. Y., district, to Philadelphia, Pa.; and J. L. Suhadolnik from the general sales office to the Newark, N. J., district. The Atlanta, Ga., district office has moved to 1371 Peachtree St., N. E. . . **VEEDER-ROOT, INC.**, Hartford, Conn.—Has elected H. L. Spaunburg chairman of the board and W. C. Stauble president. . . . **WHITIN MACHINE WORKS**, Whitinsville, Mass.—Has appointed J. W. Calvert to the sales staff at the Spartanburg, S. C., office. The company has appointed Ing. Carlos Rios Pruneda, Mexico City, Mexico, exclusive agent for the sale of its machinery and equipment in Mexico. . . . **WYANDOTTE CHEMICAL CORP.**, Wyandotte, Mich.—Has elected L. W. Munchmeyer vice president. . . . **YALE & TOWNE MFG CO., YALE MATERIALS HANDLING DIV.**, Philadelphia, Pa.—Has named T. N. Parlon sales manager for Yale electric lift trucks.

Booth

Originators of **SUPR-O-TAPE • SUPR-O-BAND • STRIP-O-MATIC • MICR-O-GRIND**

MANUFACTURERS OF QUALITY CARD CLOTHING SINCE 1892

REDUCE YOUR NEP COUNT! WITH MICR-O-GRIND*

*Pat. Pending

CARD CLOTHING

MILL TESTS SHOW:

Nep count reduced 40%

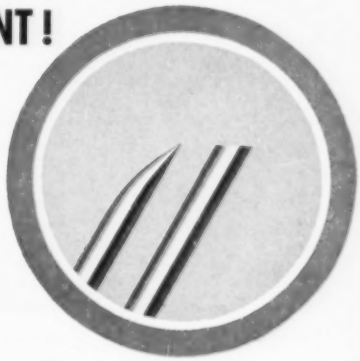
Blending improved substantially

Yarn strength up 10%

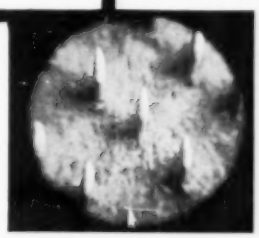
Grinding 80% less frequent

Grinding time less than 30 minutes (normal 6-8 hours)

Stripping 65% less frequent



Booth card clothing may now be obtained with a **new and exclusive** extra sharp needle point. With your first purchase of this new clothing, the MICR-O-GRIND head is available for rent so that you can regrind it yourself.



Note needle point from MICR-O-GRIND (left) compared with conventional flat point (right). Extra sharp MICR-O-GRIND points card out the neps and reduce the nep count as much as 40% on cotton. Sharper points also allow stock to release itself—hence less loading—and also give greatly improved carding action. Stripping of cotton cards only once a shift—on woolen cards as little as once a month.

Grinding discs are spiraled to take off the heel of each tooth. MICR-O-GRIND head fits your conventional grinding shaft.

HOW IT WORKS

MICR-O-GRIND card clothing is ground with spiral abrasive discs that take the heel off the wire. Accuracy of initial grind is assured by exclusive Booth electronic monitor controls. This leaves a needle-like point, long recognized as ideal for card clothing. *Never before has this ideal been attained.* Conventional grinding invariably leaves a flat point because no way was known to grind the teeth to a perfect point.

IMPROVED QUALITY

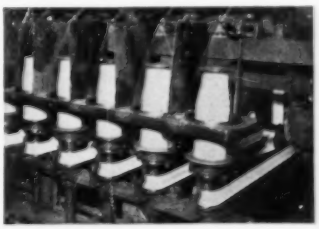
The needle point of the teeth holds the fibres long enough to be thoroughly carded and yet does not tear the fibres. This provides a more gentle combing action for increased yarn strength, better blending and reduces neps by as much as 40% in cotton carding.

Needle point is smooth enough to release the stock easily, yet the fine serrations (as seen under a microscope) will not let the fibres escape without being carded. This also means that there is less beating action at the doffer comb as the web flows more readily off the card.

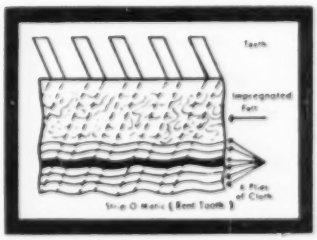
REDUCED COSTS

through reduced Down Time for grinding and stripping. MICR-O-GRIND clothing is very inexpensive—only 5% more. The MICR-O-GRIND needle point can be applied to any type of card clothing—the only difference is the point. In a cotton mill, you can get your standard 100's, 110's, etc., in either CCWC, CWC or rubberfaced foundation—also any woolen clothing.

SUPR-O-TAPE—the new proven condenser tape for longer life—improved roving—no stretch—no cracking—no need to oil—no dropped ends—holds square edges indefinitely.



SUPR-O-BAND—a new banding for spindle drives on twisting, roving and spinning frames for longer life—high friction surface—rough, rugged construction—positive drive—LINT FREE.



STRIP-O-MATIC—clothing greatly reduces stripping waste, down time and costs.

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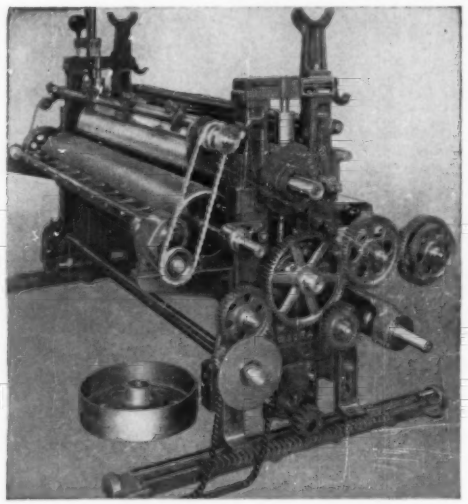

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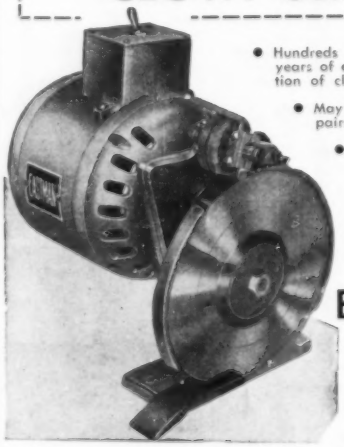

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Textile World

NEWS ABOUT MEN

Howard Bergman has been named to an executive post at Irving Worsted Co., Chester, Pa., and will make his headquarters in New York, N. Y. He will work on the development of new fibers and blends for various end uses and will handle sales in the metropolitan New York and New Jersey area.

Joseph J. Bird has been elected executive vice president of Kayser-Roth Hosiery Co., Inc., Burlington, N. C.

Andrew L. Blackwelder has been named president and assistant treasurer of Quaker Meadows Mills, Inc., Hildebran, N. C., succeeding Bascom B. Blackwelder, who will continue as chairman of the board of directors.

Thomas O. Boucher has been named president of Chicopee Mfg. Corp., and its sales company, Chicopee Mills, Inc., New Brunswick, N. J.

Leland Burns has been promoted to general superintendent of J. P. Stevens & Co., Inc.'s Republic Plants Nos. 1, 2, and 3, Great Falls, S. C.

William C. Cannon, vice president of Cannon Mills Co., Kannapolis, N. C., has been elected president of the North Carolina Textile Manufacturers Association.

Harold O. Carpenter, Jr. has been named to handle production planning and scheduling for five gray-goods plants of Cone Mills Corp., Greensboro, N. C. He will work with the company's Proximity Plant, Greensboro; Pineville Plant, Pineville; Minneola Plant, Gibsonville; Edna Plant, Reidsville; and Dwight Div., Gadsen, Ala.

C. B. Conway has retired as president, treasurer, and general manager of Danville Knitting Mills, Inc., Danville, Va.

S. J. Craig, Jr., has been made general manager of Drayton Mills, Spartanburg, S. C.

Elton D. Crenshaw has been appointed to the post of merchandising coordinator at Drayton Mills, Spartanburg, S. C.

A. A. Davis has been promoted to superintendent of J. P. Stevens & Co., Inc.'s Appleton Plant, Anderson, S. C.

JAMES L. FESPERMAN has been named general manager for James Lees & Sons Co.'s three new Southern manufacturing divisions, with headquarters at Rabun Gap, Ga.

John Reid Davis has been named superintendent of Oxford Worsted Mills, a division of Pacific Mills, Oxford, N. C.

Richard De Boalt has been named superintendent at Wood Elastic Web Co.'s plant at Brockton, Mass.

William Eison has been appointed superintendent of the new pilot plant at Hatch Mill, Columbus, N. C.

L. C. Ellis has been appointed superintendent of the New Holland Plant at Pacolet Mfg. Co., Gainesville, Ga.

Joseph L. Everhart has retired as overseer at Inman Mills, Inman, S. C.

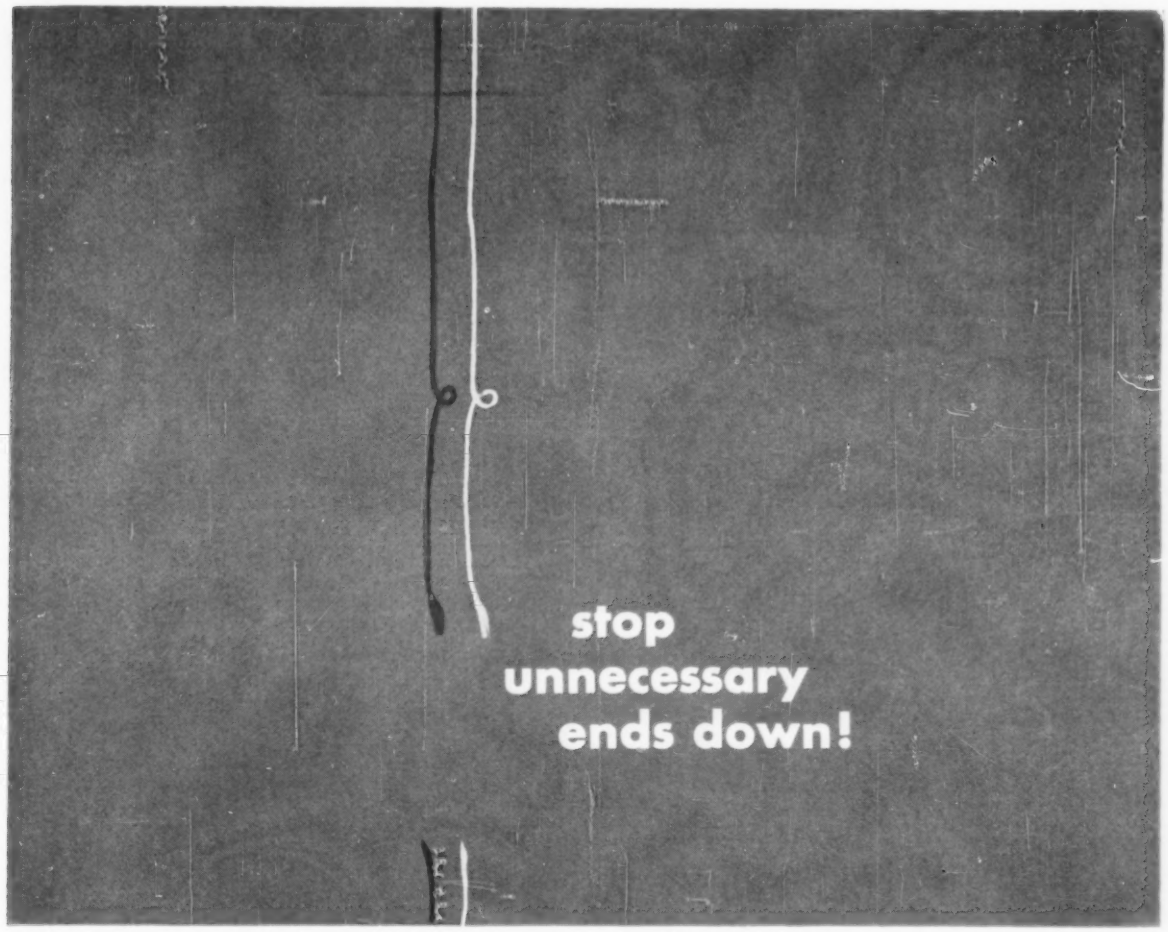
Arthur L. Flinner has been named superintendent of the bleachery and finishing plant of Millville Mfg. Co., Millville, N. J.

George Wood Furness has retired as vice president of Millville Mfg. Co., Millville, N. J.

L. E. Gatlin, Jr., has been named general manager of Newberry Mills, Newberry, S. C.

N. B. Glenn has been promoted to general superintendent of J. P. Stevens & Co.'s Appleton Plant, Anderson, S. C.

Allen Gove has been named



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THE BEST . . . is the single quality standard that raw materials, manufacturing processes, inspection, packaging and delivery must meet before CARTER TRAVELERS reach you. A rigid quality control program supervised by our own large, modern metallurgical laboratory protects this standard — assures you of dependable performance.

Absolutely uniform in weight, temper and shape—as near perfect as modern science, skilled technicians and precision machinery can make them—CARTER TRAVELERS are today's *best* insurance buy for smooth running work.

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W. T. Horton.....Belmont, N. C.
D. E. Phillips.....2702 Garden Lakes Blvd., Rome Georgia
P. L. Piercy.....128 Hudson St., Spartanburg, S. C.
J. R. Richie.....1307 Crabapple Lane, Raleigh, N. C.
J. K. Davis.....P. O. Box No. 129, Auburn, Ala.
C. E. Herrick.....139 Main St., E. Greenwich, R. I.
Oscar S Lapham.....139 Main St., E. Greenwich, R. I.
L. O. Talley.....P. O. Box 1169, Mexia, Texas
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NEWS ABOUT MEN — Continued

manager of The Kendall Co.'s Bauer & Black Div., Chicago, Ill.

Marianne Granville has been appointed designer for Mayflower Worsted Co., Kingston, Mass., and A. D. Ellis Mills, Inc., Monson, Mass.

Martin H. Gurley, Jr., has been appointed to the new position of new-product analyst for the Vulcan Rubber Products Div., Reeves Bros., Inc., Buena Vista, Va.

Albert S. Hartsell has been promoted to general superintendent of J. P. Stevens and Co.'s Industrial Plant, Rock Hill, S. C.

Frank Hawthorn has been promoted to the position of technical superintendent of Abbeville Mills Corp., Abbeville, S. C.

William G. Higgins has been appointed manager of the men's and boys' division of William Carter Co., Needham Heights, Mass.

W. G. Humphrey has been named to the new position of plant manager, Cotton Div., Judson Mills, Greenville, S. C.

Verner T. Jenkins has been promoted to superintendent of J. P. Stevens & Co.'s Piedmont Plants Nos. 1 and 2, Piedmont, S. C.

Merwin J. Joseph has been elected vice president and general manager of the Fruit of the Loom Div., Kayser-Roth Hosiery Co., Inc., Pontiac, R. I.

John Wallace Kaine has been appointed manager of the Nonwoven Dept., Callaway Mills, Inc., New York, N. Y.

Walter A. Lefler has been promoted to superintendent of J. P. Stevens & Co.'s Republic Plant No. 1, Great Falls, S. C.

Herbert Lehman has joined Ames Textile Corp., Lowell, Mass., as head of styling and fabric development.

Dan M. Leister has been appointed general manager of the Roanoke-Rapids Group, J. P. Stevens & Co., Inc., Roanoke Rapids, S. C.

David D. Lewis has been named vice president of Millville Mfg. Co., Millville, N. J.

Dr. A. L. Lippert, vice president in charge of research at Joseph Bancroft & Sons Co., Wilmington, Del., has been named to the company's board of directors.

Robert L. MacFadeyn, former plant superintendent at Joan Mills, Inc.'s plant at Lowell, Mass., has been named resident manager of the company's plant at Hickory, N. C.

William R. MacIntyre, Jr., has been named vice president and general manager of Joseph Bancroft & Sons Co., Wilmington, Del.

Felix B. Montgomery, Jr., has been elected president of Pisgah Mills, Brevard, N. C.

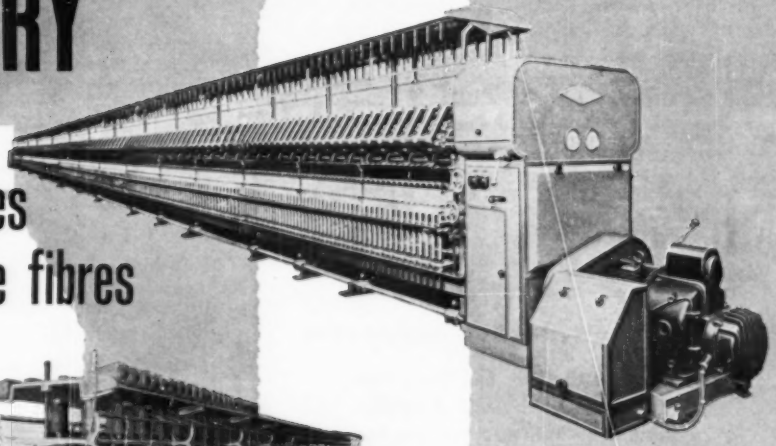
Alfred G. New has been promoted from plant manager and superintendent to general manager of Judson Mills, Greenville, S. C.

Aubrey Noland has been

GEORGE L. STAFF (left) has been appointed executive vice president of Raeford Worsted Corp., Raeford, N. C., and has also been elected a member of the company's board of directors. JOSEPH JERVIS, JR., (right) has been appointed plant manager of Rocky River Mills, Calhoun Falls, S. C.

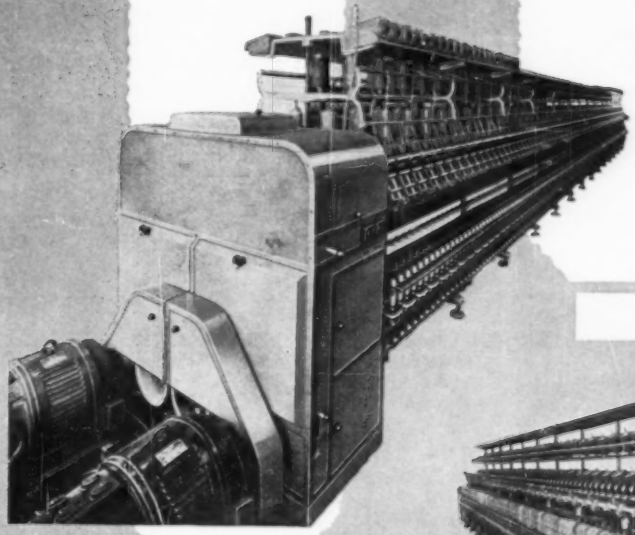
MACHINES FOR THE TEXTILE INDUSTRY

roller spindles
for all textile fibres



Cotton ring
spinning frame

Ringtwisting frame
for carded wool



Wool ring spinning frame

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NEWS ABOUT MEN Continued

named overseer of carding at Monarch Mills' Ottaray Plant, Union, S. C.

Lester Palangi, Anchor Dyeing & Finishing Co., Philadelphia, Pa., has been elected president of the Pennsylvania Textile Executives Association.

Fred C. Page, Jr., has been named superintendent in charge of the fibers division of Chatham Mfg. Co., Elkin, N. C.

Elliot I. Peterson has resigned as vice president for Manufacturing-South of Mohasco Industries, Inc., Amsterdam, N. Y.

Henry Repokis has been promoted to plant manager of McCormick Mill, McCormick, S. C.

James H. Rutledge has been named superintendent of Gayley Mill Corp., Marietta, S. C.

M. Hurt Ramsey, Jr., has been promoted from assistant superintendent to superintendent of J. P. Stevens & Co., Industrial Plant, Rock Hill, S. C.

Thornton C. Race has been promoted to sales manager of Revonah Spinning Mills, Hanover, Pa.

Robert Reed has joined Orinoka Mills, Philadelphia, Pa., and will design and style woven decorative fabrics.

J. D. Sheppard has been named manager of J. P. Stevens & Co.'s Aragon Plant, Rock Hill, S. C.

J. C. Simmons has been promoted to superintendent, Synthetic Div., Judson Mills, Greenville, S. C.

J. J. Sims has retired as secretary of Pickens Mill, Pickens, S. C.

C. L. Tidwell has been named manager of J. P. Stevens & Co.'s Monaghan Plant, Greenville, S. C.

W. F. Umstaedter has been named plant manager of Johnston Mill, Johnston, S. C.

John W. Walker has been named to the new position of assistant general manager of Gerrish-Milliken Mills, Greenville, S. C.

A. J. M. Wannamaker, secretary and treasurer of Orange Cotton Mills, Orangeburg, S. C., has been elected president of the Carded Yarn Association, Inc.

Ridley Watts has resigned as executive vice president of Spartan Mills, Inc., Spartanburg, S. C. He will be retained as a consultant.

Harold Webster has been named dyer at Pawtucket Dyeing & Bleaching Co., Pawtucket, R. I.

Textile World

OBITUARY

Francis Pickins Beacon, 88, a founder of Southern Mercerizing Co., Tryon, N. C.

Edward Bodmer, Jr., 80, owner of the former Paterson Silk Dyeing Co., Butler, N. J.

C. Herbert Davison, 76, chairman of the board of Hightstown Rug Co., Hightstown, N. J.

Albert E. Huddleston, 69, retired overseer of Crown Worsted Co., Providence, R. I.

Rufus L. Mauney, 82, president of Sadie Cotton Mills, Kings Mountain, N. C.

M. D. Pittman, 72, retired superintendent of Burlington Mills' plant in St. Pauls, N. C.

Josef Pollack, 78, former president and chairman of the board of Max Pollack & Co., Groton, Conn.

Walter S. Pomeroy, 73, former president of Thayer Woolen Co., North Oxford, Mass.

Ruddach R. P. Robinson, 74, president and treasurer of Robinson Top & Yarn Dye Works, Lowell, Mass.

Paul Calvin Shipman, 33, treasurer and general manager of Fairview Hosiery Mills, Hickory, N. C.

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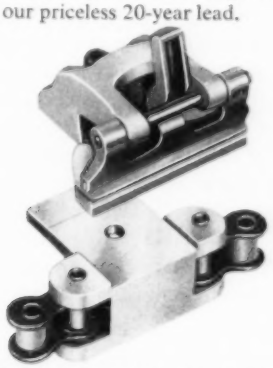
Our #11 Roller Type Tenter Clip universally sets the standards for roller clip performance. Engineered for every type of operation, equipment and fabric, it is precise in performance up to 250 ypm, has exceptionally long life at high speeds. We originated, patented and introduced the basic design 20 years ago — and constantly improve both design and materials to maintain our priceless 20-year lead.



Our Two-Piece Roller Type Tenter Clip is a typical M&W innovation — only clip of its type available in two-piece construction to eliminate down time, greatly reduce repair costs. A single socket-head cap screw and lock washer rigidly hold the two sections together. Top section can be promptly removed (and replaced) in case of damage or wear, leaving bottom of chain in place on frame — ready for immediate resumption of operation.

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Much of LAURAVEL SC's wide popularity results from its high resistance to salts, acids, and alkalies. It is stable in salt, Epsom Salt, and acid-chrome finishing baths, and may—under certain conditions—be used in the presence of 1% to 2% solutions of salt, making it ideal for softening many direct colors where a salt color fixative is used.

LAURAVEL SC is more compatible than many of its anionic counterparts with other finishing agents, such as resins and dextrines. Fabrics finished with it show excellent resistance to scorching. Used as a top softener in resin-treated goods, it is stable to residual products in the goods. It gives a superior lubrication to improve sewing and cutting properties, and adds good napping characteristics to fabrics. It gives a hand far less limp and raggy when used as a replacement for many conventional oils and softeners in compressive shrinking processes.

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. . . but there's lots more room at the bottom

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Opening for man experienced in dyeing and bleaching to take charge of night shift in North Carolina plant. Address reply P-9214, Textile World.

Wanted Assistant Dyer for Old Est. Ribbon Mfg. in Maryland. Excellent opportunity for young man. Reply stating age, experience, education and salary expected. P-9410, Textile World.

POSITIONS WANTED

Boss Carder and Spinner, 25 years experience, age 43, married. Experienced on tape and ring doffer cards, spinning on mules and frames. PW-9368, Textile World.

Felt Superintendent—Textile School Graduate. Experience on Woven, Non-woven Felt & Cloth Mfg. Wool, Cotton, Hair, Jute, and synthetic fibers. All textile machinery plus sewing, Dies, sheridan presses. Familiar with Production Methods, Cost Reduction, Industrial Relations, Product Development, and Automotive contracts. Will relocate in U. S., Canada & Mexico. Resume upon request. PW-9348, Textile World.

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20—Whitin F2 Spin Frames 240 spdls., 4" ga. 1947
4—Abbott Quill Winders, 100 spdls., pinboard, 1953
1—V. V. Finishing Range 90"-62" Nat'l Housing 1941-6
4—V. V. Duplex Stainless dye boxes 12"
1—Becco Stainless 3 stage Bleach Range
1—Burlington Pressure Beam Dyer 64", 1948
4—V. V. Stainless Dye Jiggs, 70"
6—Werner Stainless Dye Jiggs
3—R. B. & F. Print Machines, 8 Color 50", 6 Color 48", 4 Color 48"
1—Johnson 9 Drum Slasher, D.C. Drive 1957
1—Allen Rubber Warper & Rebeamer Unit 1955
1—A&G Loop Dryer, 27" long
64—C&K Looms, C-4 78", 20 harness, 1949
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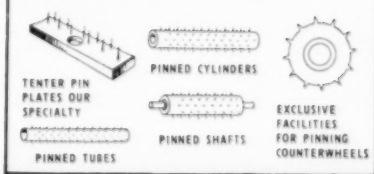

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"X-1 SUPERVISION"

TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y., December, 1958

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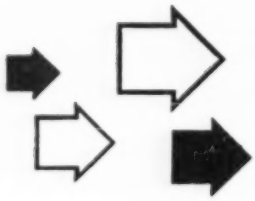

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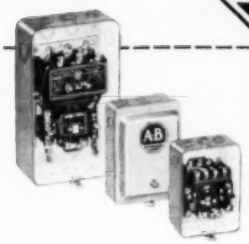


For Automatic Across-the-Line Starting

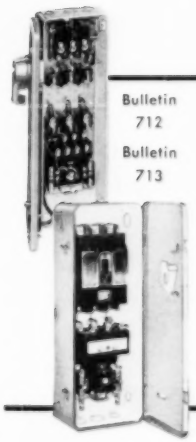
BULLETIN 709

Here's the starter that's built for millions of trouble free operations. Its simple solenoid design—with only ONE moving part—assures continuous production. Its maintenance free, double break, silver alloy contacts are always in perfect operating condition. Two permanently accurate thermal overload relays protect the motor against burnouts.

For Manual Across-the-Line Starting

BULLETIN 1209

Bulletin 1209 starting switch has a toggle action designed to meet the special requirements of loom motor operations. The unique knob operator requires deliberate action to actuate the mechanism. Enclosure prevents entrance of lint or escape of sparks to reduce fire hazard. Cast iron pedestals are optional.



Bulletin 712

Bulletin 713

Starter with Disconnect Switch or Circuit Breaker

BULLETIN 712-713

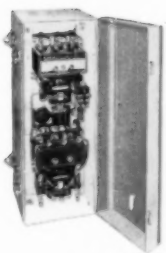
Designed for "safety"—the Bulletin 712 has a manual disconnect switch and solenoid starter in a single enclosure. The cabinet door cannot be opened while the switch is "hot."

Bulletin 713, with I.T.E. circuit breaker, has same safety features. Both use A-B Bulletin 709 starters. Neater installation than the separate units—and costs no more.

For Starting and Two-Speed Operation

BULLETIN 715

Bulletin 715 multispeed starters are designed for automatic control of two, three, and four speed squirrel cage motors of either the consequent pole or separate winding types. The solenoid contactors have maintenance free, double break, silver alloy contacts, and accurate overload relays.



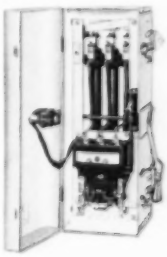
For Automatic Velvet Smooth Starting

BULLETIN 740

Graphite disc resistors are automatically inserted in series with motor during starting. Resistors and starting period can be adjusted to motor and load conditions for velvet smooth acceleration. Accurate thermal relays protect the motor against overload under all conditions.

For Velvet Smooth Stepless Starting

BULLETIN 640



Graphite compression disc resistors provide smooth, stepless starting of polyphase squirrel cage motors. Operated by hand lever, the smooth starting of the motor and machine is under the control of the operator at all times. Accurate thermal overload relays protect the motor.

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